No. 4216. VOL CLVI.

SATURDAY, FEBRUARY 7, 1920.

ONE SHILLING.

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"IT IS ENTIRELY CONTRARY TO THE POLICY OF THE BRITISH TREASURY TO INCUR FRESH INDEBTEDNESS TO THE UNITED STATES": MR. CARTER GLASS, SECRETARY OF THE U.S. TREASURY, TO WHOM OUR OFFICIAL REPLY WAS SENT.

Mr. Carter Glass, it will be recalled, recently wrote an important letter explaining the policy of the United States Treasury in regard to foreign exchanges, in the course of which he suggested the shipment of gold from Europe to America. He also said: "The United States could not, if it would, assume the burdens of all the earth. It cannot undertake to finance the requirements of Europe, because it cannot shape the fiscal policy of the British Treasury to incur fresh indebtedness in the United States."

policies of the Governments of Europe.". A British reply was handed to Mr. Glass, containing the following: "In view of the repeated allegations in the Press that the British Government desires to borrow large sums in the United States, the Government states, as has been explained more than once in Parliament, that it is entirely contrary to the

PHOTOGRAPH SUPPLIED BY TOPICAL.



By HILAIRE BELLOC.

NE of the best forms of dissipation (and certainly the cheapest) is reading old newspapers. You go to a public library, you take what is called "a representative newspaper" (that is, the kind of newspaper which was read and believed by great numbers of your own sort-not a crank paper, nor an élite paper, as the Americans would call it, but a solemn paper); you take its issues a good way back-say, twentyfive years or more—and you read its views of the future; implied and stated. It is extraordinarily

entertaining.

Like all vices,

this vice brings



FROM DAMASCUS TO BORSTAL: A LAMP WITH A ROMANTIC HISTORY. In 1914, Mr. Donald Maxwell purchased, in Damascus, seven sanctuary lamps-of which this is one. When war broke out, he had to leave them behind him. fell to Allenby's forces, Mr. Maxwell found that the lamps were safe, buried by their Assyrian maker-a Christian-under rubbish at the back of his shop, in the Street that is called Straight, which had been turned munitions factory by the Turks. Mr. Maxwell has now presented them to St. Matthew's, Borstal.

on a punishment; and the particular punishment in this case is that, once you have acquired this habit, you can never read the newspapers of your time seriously. Whenever they express an opinion they make you laugh: and since the people of one's own time get their ideas entirely from the paper, the consequence is that if you are given to this form of dissipation you come to laugh at your contemporaries, and they do not like it. Therefore, I do not recommend the habit to anyone unless he desires to be wiser than the rest-a foolish and a vain desire. For this practice of communicating with dead folly has no practical or positive value; it

does not lead you to do anything or to make anything; it cannot tell you what the future is to be. It only aids your judgment negatively. It makes you pretty certain of what the future will not be. It will certainly not be what people now think it will be. . . . I am not sure, after all, that there is not an inkling of positive value lurking in the thing, for when you are thoroughly convinced that people are all wrong about what is coming, it inclines you to look for the germs of the future in the present; it makes you look carefully along the ground for seeds that may be sprouting.

In that part of the country where I live nothing is commoner than to see what looks like a little green weed coming up at random even in clean land. But as you take your spud to work it out (the only recreation of the countryside) you discover it to be a tiny oak. You then say to yourself (if you like): "I have only to wait 150 years and this will become a great tree, worth at least £5." You spare it, therefore, and pass on. So it is with the judgment of the future from the present. The future will not be a mere exaggeration of the present. Things important in the future will spring from things unimportant to-day, and things important to-day will decay. But many of the things that will be important in the near future have already begun to sprout; they are showing above ground; and, though they are still very little, if one looks carefully for them one can see them-for instance, necromancy.

Old-fashioned people, before the Press became what it is, and before men and women got crowded into these enormous towns and cut off from all reality, imagined the future (and the past, for that matter) in terms of themselves. That was childlike, and it did no harm, because, though their visualisation was wrong, their philosophy was right. But the way of the newspaper era-say the last seventy years, and especially the last thirty—is different from that; the judgment is not static, it is dynamic. The future is thought of as something quite different from the present and growing out of the present, but growing out along known lines which are a mere continuation of the present direction. The only modification to this idiocy is that the unpleasant developments which should follow upon such a theory are shelved, and the pleasant ones-or, at any rate, those which seem pleasant to the writers-are

For instance, if the London agglomeration of building now counts about seven million, these people take it for granted that in the near future it will count ten million. They like it to be big; they see it growing, and they cannot imagine any flexion, any curve; the simplicity of the straight line, of the tangent, is all they can grasp. It requires least thought. It is the same way with plagues: the suggestion of a plague which would deflect our civilisation seriously is neglected because certain known forms of plague have worn themselves out, and have also in a measure been warded off by accumulated experience. There is no reason whatever why some new scourge should not suddenly attack us, and, if it did, what would happen to any one of to-day's prophecies? How would any of them look?

When I read these old newspapers I find them particularly entertaining upon foreign affairs. There were two things which kept them awake at nights: one was the French Navy, and the other was the Army of the Russian Tsar pouring into Afghanistan. Side by side with these mighty perils were the doctrines of negation: certain nations were dying, others were dead, and certain moral forces in Europe were negligible. Of these doctrines a large number remain. Thus, very few people as yet appreciate what may be the future position of Spain. There are a rather larger number beginning to appreciate what will certainly be the future position of Italy. Until people wake up to

a new force—and they do not do so until that force is already pretty big-they do not study its elements. The growth of population is a good instance. Nobody bothered about the regular and rapid decline of the French birth-rate down to the middle of the nineteenth century; people only began to talk of it after the defeat of the French by the Prussians fifty years ago. Very few people to-day could give you even approximately the curve of Italian, let alone Spanish, increase. It is worth studying. Not that increase or decrease of factor in the greatness of a nation, but that it is, after all, the chosen factor of this sort of judges; and yet they neglect it where it is most significant.

The old papers had great fears for the institution of the Mon-

archy; they whispered or hinted that Edward the Seventh would never reign. They were divided upon the advantages of extending the suffrage. Some said that to put this enormous power into the hands of the mass would act ill; others said it would act well. What occurred to none of them was that it would be

insignificant, and that, as the years went on, people would care less and less whether they had a vote or no, having found it of such very little effect upon their lives or that of the nation. Neither is it unamusing to read the old newspapers on the matter of the Argentine. There are three strata in this affair. There is, first, the stratum of "South American Republics." That is the cliché. Everything ridiculous in the world is tacked on to the phrase, "South American Republics." If a man went drunk to the House of Commons and made a scene, the South American Republics would be dragged in as an awful example. If a railway service was bad, it was "worthy of a South American Republic." The next stratum was (as one might expect) not judgments, but items of news chiefly connected with speculation. A man reading those bits of news might have seen that one of the South American Republics at least is going to count. Indeed, one man did see it-before his fellows-and thereby lost a great fortune. Then there was a little interval, and you got the third stratum, in which the greatness of the Argentine is quietly taken for granted. It is the same way with the industry of Prussianised Germany, and with twenty other things.

So perhaps this habit of reading old newspapers has yet another positive advantage which I had neglected when I spoke too severely of it just now. It may teach us that a careful examination of the news in our own day will discover here or there some really significant truth. And in this connection landmarks or milestones are interesting and useful. It is a pleasure to cut out some piece of news which marks a definite turning point; it is usually printed in very small print and on an inside page: the first event.

I wonder sometimes how antiquity would have done it, if antiquity had had a Press! One can imagine a news sheet in Byzantium telling one that a middle-aged Arab on the east coast of the Red Sea had been making a disturbance, and that his name was Mamoud. Or (a few hundred years earlier) that a small secret society had been making itself objectionable in Lyons, and that its leader was one Irenæus. They would make good reading now.



THE "DARKE LADYE" OF SHAKESPEARE'S SONNETS? THE FYTTON MONUMENTS IN GAWSWORTH CHURCH; INCLUDING MARY FYTTON.

The sale of Lord Harrington's Cheshire properties, including Gawsworth Church, with the famous Fytton monuments, has again directed attention to the monuments, and has revived the story that Mary Fytton was the Dark Lady of Shakespeare's Sonnets. This has brought contradiction from a number. Mr. George Greenwood, for instance, writing to the "Observer," says: "There are at Arbury two contemporaneous portraits of Mary Fytton, both painted in her youth, and, as Sir Francis Newdigate-Newdegate pointed out to me when I inspected them a few years ago, they both show her to have been not a 'dark' but a fiir lady. . . . There is not a scintilla of evidence to connect her in any way with William Shakespeare That she was the 'dark lady' of the Sonnets is a fond thing vainly invented."-[Photograph by C.N.]

> Of course, we actually have, still preserved, certain fossils of the kind, not in newspapers, for they did not exist, but in classics and fragments of the classics. But these I would not seek out lest they should prove the old world as silly and self-conceited as the world of to-day, and so leave no refuge for a discontented soul.

PERSONALITIES OF THE WEEK: PEOPLE IN THE PUBLIC EYE.

PHOTOGRAPHS BY FRANKI, GIRCKE, GERLACH, RUSSELL, SWAINE, "DAILY MAIL," LALLIE CHARLES, TOPICAL, LAFAYETTE (DUBLIN), SPEAIGHT, C.N., ELLIOTT AND FRY, AND LAFAYETTE (LONDON).



GERMANY'S LONDON
REPRESENTATIVE:
DR. STHAMER.
Dr. Sthamer, Burgomaster of
Hamburg, is the new German
Chargé d'Affaires in London.



GERMANY'S BRUSSELS
REPRESENTATIVE: HERR
D. LANDSBERG.
Herr D. Landsberg has been
appointed German Charge
d'Affaires in Belgium.



FRENCH MINISTER IN BERLIN:

M. DE MARCILLY.

M. A. de Marcilly has recently been appointed as Minister Plenipotentiary to represent France in Germany.



A MARTYR OF SCIENCE:
DR. C. R. C. LYSTER, C.B.E.
Dr. Cecil Lyster contracted
cancer through exposure to
X-rays during researches. He
died on January 26.



LIBERAL WHIP: THE LATE MR. J. W. GULLAND. Mr. Gulland was Chief Liberal Whip in Mr. Asquith's Government during the war, and formerlyScottish Liberal Whip.



A NEW MAGISTRATE: MR.
J. A. R. CAIRNS.
Mr. Cairns has been appointed
a Metropolitan Magistrate. He
has been acting as a Deputy Judge
at the London Sessions.



TO SECOND THE LORDS'
ADDRESS: LORD CHARNWOOD.
Lord Charnwood is to second

the Address to the Throne in

the House of Lords on the 10th.



TO MOVE THE

COMMONS' AD-

DRESS : THE HON.

SIDNEY PEEL.

Lieut.-Col. the Hon.

Sidney Peel, Mover

of the Address in the Commons, is M.P. (C.U.) for the Ux-

bridge Divisio

NOW PRINCESS CHRISTOPHER
OF GREECE: MRS. LEEDS.
Mrs. W. B. Leeds, widow of the
American "tin-plate king," who
left her £3,00,000, married Prince
Christopher of Greece on Jan. 31.



AGAIN ATTACKED IN IRE-LAND: SERJEANT SULLIVAN, K.C.

K.C.
Serjeant Sullivan was fired at on
January 27 in a train. He was
previously attacked on Jan. 9.



TO MOVE THE LORDS' ADDRESS:
THE MARQUESS OF DUFFERIN.
The Marquess of Dufferin and Ava is to
move the Address in the House of Lords
when Parliament reopens on the 10th.



MARRIED TO MRS. W. B.
LEEDS: PRINCE CHRISTOPHER OF GREECE.
Prince Christopher is the youngest

Prince Christopher is the youngest brother of ex-King Constantine, and son of the late King George.



RECENTLY IN LONDON:
DR. VAIDA-VOEVOD,
ROUMANIAN PREMIER.
Dr. Alexander Vaida-Voevod,
Premier of Roumania, lately
spent some days in London.



TO SECOND THE

COMMONS' AD-

DRESS: MR. W.

J. U. WOOLCOCK.

Mr. Woolcock, who

is to second the Ad-

dress in the House of

Commons, is Coalition Liberal Member for Central Hackney.

THE NEW DEAN OF SALISBURY: THE VERY REV. H. G. JONES.

The Very Rev. H. G. Jones was previously Archdeacon and Vicar of Sheffield.



AN IMPORTANT RESIGNATION:
MR. G. N. BARNES, M.P.
The Rt. Hon. G. N. Barnes, who became a Minister without Portfolio last year, recently resigned.



THE NEW DEAN OF MANCHESTER: THE VERY REV. J. G. McCORMICK. The Very Rev. J. G. McCormick was previously Vicar of St. Michael, Chester Square.



CREATED A K.C.M.G.:
ADMIRAL PITKA.
Rear-Admiral Johan Pitka
is Commander-in-Chief of the
Esthonian Navy operating in
the Baltic.

THE BIG INTERNATIONAL RUGBY MATCH: ENGLAND V. FRANCE.

PHOTOGRAPHS BY C.N.



France showed once more, on January 31, when she played England at Twickenham, that she must be reckoned with seriously in International football. The result was: England, I goal and I penalty goal—8 points; France, I try—3 points. France took up Rugby in earnest a dozen or so years ago, and has made remarkable progress. The portraits of the English team are given in the border of this page, beginning with the fifth from the top, reading to the right, and then reading down: H. Millett (Richmond), L. P. B. Merriam (Blackheath), J. E. Greenwood (Cambridge University; Captain), C. N. Lowe (Blackheath), F. W. Mellish (Blackheath), A. M. Smallwood (Cambridge University),

E. Hammett (Newport), G. S. Conway (Cambridge University), W. M. Lowry (Birkenhead), W. H. Wright (Plymouth), W. W. Wakefield (Harlequins), C. A. Kershaw (United Services), W. J. A. Davies (United Services), F. Taylor (Leicester), and G. Holford (Gloucester). The French team were: Cambre (Orolons), Jaurreguy (Racing Club), Crabos (Racing Club), Lavigne (Dax), Serre (Perpignan), Struxiano (Toulouse; Captain), Billac (Bayonne), Lubin-Lebrere (Toulouse), Pons (Toulouse), Soulie (G.A.S.G.), Puech (Toulouse), Cassayet (Tarbes), Guichemerre (Dax), Laurent (Bayonne), and Thierry (Racing Club). The match was watched by a crowd of some 15,000 people, who cheered the Frenchmen loudly at the end.

"A RETURN TO HEALTHY PARTY CONDITIONS": MR. ASQUITH AT PAISLEY.

PHOTOGRAPHS BY C.N., SPORT AND GENERAL, AND PHOTOPRESS.



CONSULTING WITH SIR DONALD MACLEAN, MR. VIVIAN PHILLIPS (SECRETARY), AND MR. McNAIN (AGENT): MR. ASQUITH (SECOND FROM LEFT) AT PAISLEY.



ADVOCATING "THE OPEN DOOR" FOR WOMEN TO ALL PROFESSIONS: MR. ASQUITH ADDRESSING WOMEN ELECTORS IN THE CENTRAL HALL AT PAISLEY.



TOURING THE CONSTITUENCY: MR. ASQUITH AND HIS DAUGHTER, LADY BONHAM-CARTER, IN THEIR CAR.



WITH MRS. ASQUITH, WHOSE AUTOBIOGRAPHY IS EAGERLY AWAITED: MR. ASQUITH AT PAISLEY.



MY FATHER IS NOW A WHOLE-HEARTED AND KEEN CONVERT"
TO THE CAUSE OF WOMEN: LADY BONHAM-CARTER SPEAKING.

Mr. Asquith, accompanied by his wife and his daughter, Lady Bonham-Carter, has been conducting a vigorous electioneering campaign at Paisley, where he is standing as Liberal candidate in the bye-election against a Unionist, Mr. J. A. D. MacKean, and a Labour candidate, Mr. Biggar. The polling is fixed for February 12, and the declaration of the poll for February 25. Mr. Asquith, it is reported, "was made the subject of almost embarrassing hero-worship." He spoke of "the need for a return to healthy party

conditions." On February 1 he addressed a crowded meeting of women electors (who number 16,000 at Paisley) in the Central Hall, and said that there ought to be "a complete opening of callings for women on the same terms as men," even up to the Judicial Bench. Lady Bonham-Carter said that her father's old attitude to women suffrage was not so much because women were not good enough for votes, but that votes were not good enough for women. He was now a wholehearted and keen convert.

Vandalism in Rome: The Arch of Constantine Plastered with Italian Loan Placards.





A MONUMENT OF ANTIQUITY USED AS AN ADVERTISEMENT HOARDING: ITALIAN LOAN POSTERS ON THE ARCH OF CONSTANTINE.

It seems hardly credible that the Italian Government can be responsible for the extraordinary act of vandalism revealed by the above photograph, which reaches us from Rome. It shows the celebrated Arch of Constantine, one of the most magnificent and venerable monuments of antiquity which have survived the centuries, defaced with placards of the new Italian National Loan. It is as if we were to plaster War Savings posters on the walls of Westminster Abbey! However laudable the cause may be, there is surely a limit to the uses of advertisement. The Italian Loan has been successful enough not to need such methods, for it was stated on January 30 that the subscriptions had already exceeded 12 milliards of lire (£480,000,000), or nearly double the sum raised by the Loan of 1918. - [Photograph by Sport and General.]

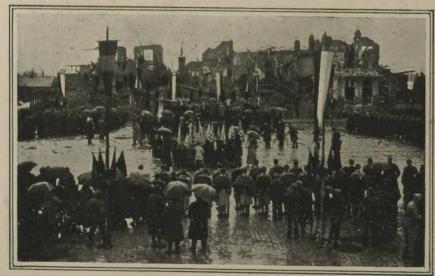
Decorating War-Stricken Towns with the Croix de Guerre: President Poincaré in Belgium.



WHERE THE POPULATION IS 1300 OUT OF A FORMER 19,000: A RAIN-WASHED CERE-MONY AT YPRES.



WHERE 553 PEOPLE (OUT OF AN ORIGINAL 4337) ARE LIVING IN HUTS: THE CEREMONY BEFORE THE RUINED HOTEL DE VILLE AT NIEUPORT.



SHOWING PRESIDENT POINCARÉ AND KING ALBERT IN THE CENTRE BACKGROUND: THE DECORATION CEREMONY AT DIXMUDE.

President Poincaré made a tour in Belgium on January 28 to decorate four warstricken towns with the Croix de Guerre. Accompanied by Marshal Foch and M. Millerand, he arrived by train at Furnes, the first town to be decorated, at 8.20 a.m., and was met at the station by King Albert. The ceremony took place near the Hotel



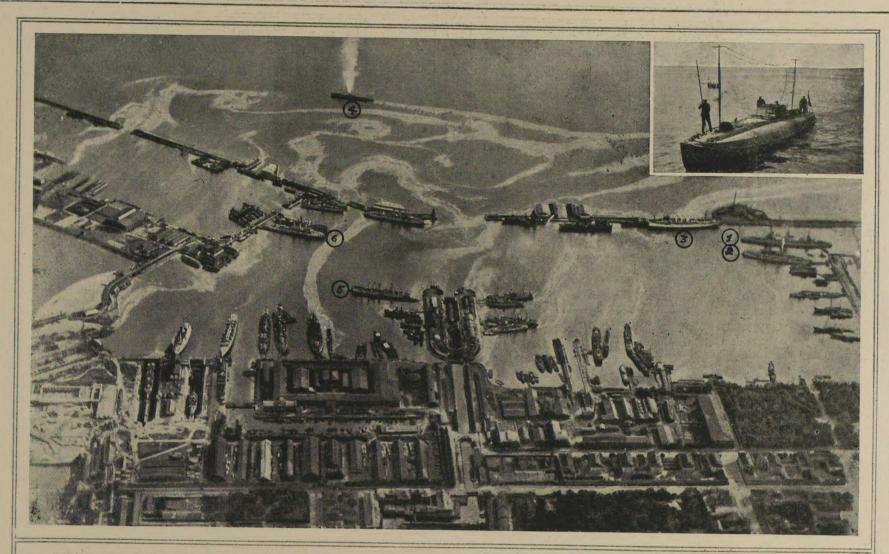
PRESIDENT POINCARÉ AND KING ALBERT HEADING THE PROCESSION TO THE GRANDE PLACE: THE FIRST CEREMONY OF THE DAY, AT FURNES.

de Ville, where M. Poincaré pinned the cross on a satin cushion. At Nieuport, the decoration took place in front of the weeked Hotel de Ville. Returning to Furnes, they next went by train to Dixmude, where the ceremony was held in the middle of the town. Ypres was the last to be decorated, and heavy rain marred the proceedings.

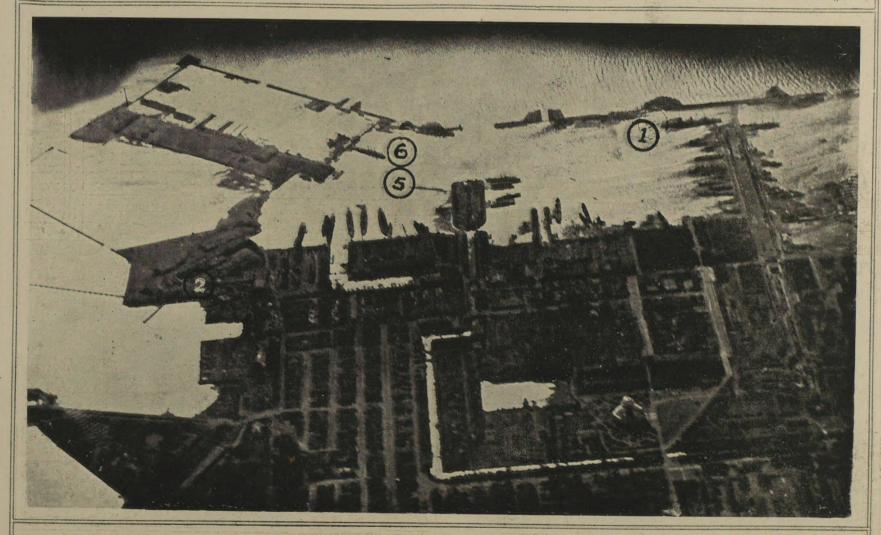
PHOTOGRAPHS BY SPORT AND GENERAL, ANTONY, I.B., AND MANUEL.

THE GREAT C.M.B. RAID ON KRONSTADT: REMARKABLE AIR PHOTOGRAPHS.

PHOTOGRAPHS REPRODUCED BY COURTESY OF ADMIRAL SIR-W. COWAN, S.N.O. BALTIC, AND SUPPLIED BY MR. JOHN POLLOCK.



BEFORE THE RAID: KRONSTADT; RUSSIAN WAR-SHIPS IN HARBOUR, AND THE GUARD-SHIP. (INSET-THE FIRST C.M.B. INTO THE HARBOUR.)



AFTER: THE "PETROPAVLOVSK" AND "PAMATS AZOVA" SUNK; THE "ANDREI PERVOZVANNYI" (IN DRY DOCK); AND OTHER SHIPS DAMAGED.

On August 19 last year, the Admiralty made the following announcement: "A report has been received from the British Senior Naval Officer in the Baltic that a naval engagement took place in the Gulf of Finland early on August 18. Two Russian battle-ships, the 'Petropavlovsk' and the 'Andrei Pervozvannyi," and one destroyer were sunk. A cruiser was also probably seriously damaged. The British losses were three coastal motor-boats." Later news stated that the action took place immediately off Kronstadt, over a Bolshevist minefield. The Coastal Motor-Boats attacked without the support of the fleet, but accompanied by three aeroplanes, one of which came down near Styrsudds Lighthouse. The British losses were three motor-boats sunk by gun-fire and one blown up by a mine. At the time, Lieut. William H. Bremner, D.S.O., was reported among

the killed. It is good to know that he was only wounded, and has just been released by the Soviet Government. In the upper photograph No. 1 is the "Petropavlovsk"; No. 2, the "Andrei Pervozvannyi"; No. 3, a hospital ship (removed before the second photograph was taken); No. 4, the cruiser "Bogatyr," acting as guard-ship; No. 5, the "Pamats Azova"; No. 6, unknown ships (one presumed damaged or sunk during the raid. In the lower photograph, it will be seen that No. 1—the "Petropavlovsk"—is half sunk in the water; that No. 2—the "Andrei Pervozvannyi"—has been taken to dry dock, damaged; that No. 4—the "Bogatyr"—has gone, presumed sunk; that No. 5—the "Pamats Azova"—has been sunk; and that at No. 6 one of the two unknown ships has been damaged or sunk.

THE SLESVIG PLEBISCITE: FLENSBORG-TO BE DANISH OR GERMAN?



WHERE 300 BRITISH MARINES WERE LANDED TO KEEP ORDER: THE HARBOUR AT FLENSBORG,



OCCUPIED BY BRITISH AND FRENCH TROOPS FOR THE SLESVIG PLEBISCITE: FLENSBORG—THE NORTH GATE.



"WE WANT TO RETURN HOME TO DENMARK": A GENERAL VIEW OF FLENSBORG AND ITS PORT, RECENTLY
THE SCENE OF A GREAT DANISH PROCESSION WHICH VOICED THAT SENTIMENT.



IN SLESVIG, WHICH HAS TO CHOOSE BETWEEN DANISH AND GERMAN RULE: A TYPICAL VILLAGE IN THE SECOND PLEBISCITE ZONE.



WHERE GERMAN SCHOOLBOYS HAVE THRASHED THEIR DANISH SCHOOLFELLOWS: FLENSBORG—THE OLD TOWN HALL.

Flensborg is an important town in Slesvig, where the terms of the Peace Treaty ordained that a plebiscite of the population should be taken in several zones to decide the new frontier between Denmark and Germany. The town has lately been the scene of racial disturbances, and British and French military and naval forces are quartered there to keep order. On January 23 there was a Danish procession of 8000 people, and speeches were made expressing the sentiment—"We want to return home to Denmark." The same day the German "Noske Guards" left the town. On the 26th the International

Commission, including Sir Charles Marling (accompanied by Lady Marling) arrived there, and British and French troops lined the route from the station. After the troops had dispersed, however, German rowdies attacked the bearers of Danish flags in the crowd, and free fights ensued. The Commission ordered 300 Marines to come ashore from the British war-ships. Danish boys who had taken part in the procession were thrashed by German schoolfellows, and women selling Danish papers were maltreated. In country districts German gangs broke up Danish meetings. One plebiscite is to be taken on March 7.

FLOATING "HOUSES": PERIOD ROOMS ON BOARD AN "A" BOAT.



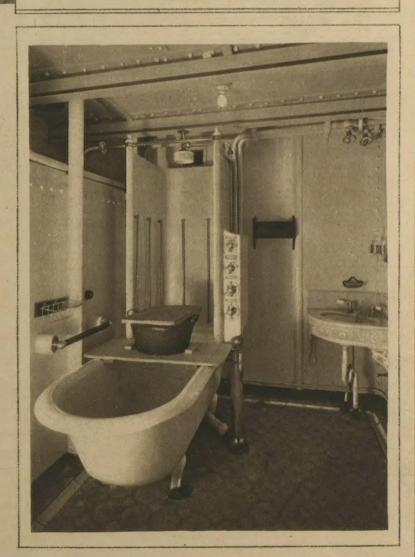
DECORATED IN GEORGIAN STYLE: A CORNER OF THE FIRST-CLASS DINING SALOON IN THE "ALMANZORA."



PROVIDED WITH THREE ROCKING-HORSES, SPACE TO ROMP, AND NO SHARP CORNERS: THE CHILDREN'S PLAY-ROOM.



FURNISHED IN LATE-ELIZABETHAN STYLE: THE SOCIAL HALL, WITH HAMMER-BEAM ROOF AND LATTICE WINDOWS.



FITTED WITH A "SHOWER" AND EVERY TWENTIETH-CENTURY CONVENIENCE: A BATH-ROOM IN THE "ALMANZORA."

Last week we illustrated the amenities of modern ocean travel as exemplified by a theatre on board a Cunarder. The above photographs show the luxurious accommodation in the latest of the famous "A" Boats of the Royal Mail Steam Packet Company, the R.M.S.P. "Almanzora." Her maiden voyage to Brazil was to have been made in the autumn of 1914, but fate intervened and she became an armed cruiser, doing valuable cruising, patrol, and convoy service throughout the war, during which she steamed 191,949 miles. Of her sister "A" Boats will be remembered especially the "Asturias,"

which, as a hospital ship, was torpedoed by the Germans (but not sunk), and the "Alcantara," sunk while assisting to sink a German raider. The "Almanzora" has now been re-converted into a liner. In the decoration, various periods of old English styles have been adopted. Thus, the Dining Saloon, which holds 400 guests, is Georgian, and the Smoke Rooms Jacobean. The chief feature, however, is the beautiful Social Hall, done in late Elizabethan. The room is very lofty, with a hammer-beam roof and lattice windows, while the furniture consists of reproductions of antiques.

By PROFESSOR W. H. BRAGG, C.B.E., F.R.S., D.Sc.

CERTAIN sounds and certain successions of sounds are very pleasing to our senses; and in the course of ages we have discovered by methods of trial and error the instruments from which we can best extract the music we like. We will consider the simpler principles which govern the construction of instruments of this kind.

In the first place it is necessary to know how to make a sound that for some time remains unchanged; a sound that has a definite pitch like the note of a



FIG. 10.—PAN PIPES, IN WHICH THE PLAYER BLOWS ACROSS THE ENDS, TO MAINTAIN VIBRATION.

tuning-fork or an organ-pipe, and is quite different from an irregular noise such as is made by the coal-man when he empties a sack on the pavement.

If I waye my hand towards you an air pulse travels away at a great rate, 1100 feet a second; it strikes

the ears of everyone present, but it makes no obvious impression. If I were to wave my hand as fast as I could there would still be no result in the way of sound; but if I could wave it fifty times a second your ears would be filled with a deep booming note. The ear can detect pulses only when they succeed one another with sufficient rapidity; and when this happens the pitch of the note depends only on the rapidity

of succession and not on the kind of pulse. As I cannot wave my hand so quickly as that, we must have recourse to some mechanical method of producing pulses regularly and with sufficient frequency. The siren (Fig. 1) consists of a cylindrical brass box into which air is forced into circular rows of small holes; out of which the compressed air can emerge. Just above the lid is a brass disc which can turn round freely; it also is pierced with four rows of holes exactly corresponding to those of the lid. By an arrangement of keys

and sliders working just underneath the lid, air can be admitted to any one or more of the four rows; let us say the row containing 24 holes. When the holes in the top disc are just over those in the lid, air spurts through all the 24 holes at one and the same time and starts one of those pulses which are going presently to be linked together in a sound. If the disc is kept moving the holes are alternately open and shut, so that a regular succession of pulses is sent out into the air. It

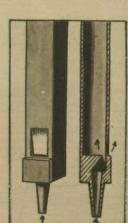


FIG. 11.—AN ORGAN-PIPE, SHOWING THE MOUTH AND ARRANGEMENT FOR DIRECTING A STREAM OF AIR UPON IT (THE RIGHTHAND FIGURE SHOWN IN SECTION).

the supply of air from the bellows is kept up, the disc revolves faster and faster. That is because the holes in the lid and the disc are cut in a slanting fashion (see lower figure and inset Fig. 1) so that the issuing air turns the disc round.

The important thing to observe is that as soon as the speed increases sufficiently we are aware of a note very deep in the bass. As the disc spins faster and faster, the noise rises in pitch and finally ends in a shrill scream. At any one moment we have a note of definite pitch because pulses are striking our ears regularly and with sufficient speed; and the pitch rises as the pulses come quicker. Here is the whole differ-

ence between a note and a "noise"; in the one there is regularity, and in the other none. It makes no difference to the pitch of the note when we take some other way of exciting the air pulses so long as the number of pulses in a second remains the same. For instance, if a card is held against the teeth of a rapidly revolving wheel (Fig. 2) pulses are started by the flapping of the card from tooth to tooth, and we hear a note of definite pitch. There are eight wheels on the axis of

the electro-motor, and the number of the teeth on the different wheels are 24, 27, 30, 32, 36, 40, 45, 48. As they are touched in succession with the card we get the notes of the ordinary musical scale.

Whatever method is used to excite the pulses, and whether the notes be bass or treble, the number of pulses a second required to produce a note of given pitch is always the same, and also the number of pulses in a second for the different notes of the scale are always in these proportions.

A mosquito beats its wings at a certain rate, and by so doing creates a note of definite pitch. When the wheels in the gear-box of a motor-car play into each other the note of the hum depends on the rate at which the interlockings take place. When the car goes past on a wooden or asphalt pavement there is often a shrill scream, which comes from the regular tapping of the studs upon the road. There is a definite note when the finger is drawn along a piece of ribbed silk or across the back of a book if the material of the back has a regular structure.

In order to make a musical instrument we must find something which will naturally repeat some movement over and over again. A stretched string has long been used for the purpose (Fig. 3); perhaps it was first suggested by the twanging of the bow-string. When a string is pulled to one side and let go, it straightens itself, then carried by its impetus swings over to the other side, stops, recoils and swings again; and the movement is repeated hundreds of times before it finally comes to rest. Each time it swings it sends out a pulse into the air. The string is thin, the pulses

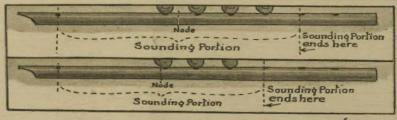


FIG. 12.—A TIN WHISTLE, IN WHICH THE EFFECTIVE OR SOUNDING PORTION REACHES FROM THE MOUTHPIECE TO THE NEAREST HOLE THAT IS OPEN.

which it excites directly are very weak; it is therefore mounted on a sounding board or box, which it shakes as it swings, and the wide surface of the box launches broader pulses with more energy in them. The pitch of the note depends on how long the string is, how tightly it is stretched, and on its weight. The weight is, of course, settled when the violinist mounts it on his violin. In the case of the harp or the piano, there is a different string for every note that is to be played; but on the violin there are only four strings, and the player must make the right note for himself.

The tuning-fork (Fig. 4) gives out pulses in regular succession as its prongs swing to and fro; bits of wood when struck vibrate long enough to cause a recognisable note, and a wooden dulcimer (Fig. 5) can be built up of pieces of different sizes. A wooden rod when stroked lengthways with a resined cloth gives a note because

it shivers along its length; from the bamboo harp (Fig. 6) which Tyndall describes, we can get the notes of the scale.

Strings and wind are the two great forces of the orchestra: let us see now how the wind instruments are made. Here is a tall jar, over which I hold a vibrating tuning-fork (Fig. answers to the fork to some extent, but notice that, as water is poured in, the response is better and better, until at a certain depth the jar rings out loudly. The fact is that the air inside the jar vibrates up and down; at the surface of the water in the jar it is at rest, at the mouth the motion is greatest, and there is a natural frequency of vibration which varies with the size of the column of air. If I take a fork of higher pitch I must shorten the air column still further by pouring in more water, until once more the response is strong. The response occurs when the natural note of vibration agrees with that which the

fork would impose upon it. Here we have examples of the important fact that columns of air may be used as strings have been used, and that is the base principle of all instruments blown by wind. Air columns start strong pulses in the air, being unlike

strings in this respect, and stop vibrating very soon unless their vibrations are maintained continuously. We get something like the plucking of a string when we pull a cork out of a bottle; the sudden jerk starts the air inside into a few vibrations which die out quickly because their energy is radiated away. Here is a row of corked test-tubes into each of which water has been poured until it gives a desired note (Fig. 8); when the corks are pulled out in succession we find we are going up the musical scale.

In order to maintain the vibration, we find we must blow across the mouth of the tube (Fig. 9), and if the blowing is done the right way, we may get a very loud note. In the old "Pan-pipes" (Fig. 10) the player blew across the ends; in the flute, across a

hole in the side. The whistle and the flageolet possess channels along which the blast of air is led so as to strike the end of the tube in just the right way. A series of pipes of different lengths is used in the organ, one pipe for each note (Fig. 11). In the whistle the

player has his finger on a series of holes; when he opens his holes, beginning at the one farthest from his mouth, it is as if he were gradually shortening his pipe, because the effective portion reaches from the mouth-piece to the next hole that is open (Fig. 12).

The motions of a column of air are difficult to follow because they are invisible. The motions of spiral springs are exactly the same in character, and are easy to watch. The long spring (as in Fig. 13, but single) is fixed at the top; it can be set in motion by pulling down the bottom end and letting go, when it starts oscillating up and down. Just so the air in a jar [Continued on page 230.



FIG. 13.—ANALOGOUS

TO THE VIBRATION

OF AIR IN A PIPE:

TWO SPIRAL SPRINGS

WHICH, WHEN SET

SWINGING TO-

GETHER, BALANCE

THEIR TENSIONS AT

Baltery

Wire dancing in and out of mercury and making a spark every fime electrical current is broken

FIG. 14.—DANCING SPRINGS VIBRATED ELECTRICALLY (N=A NODE, OR POINT OF REST: THE ARROWS-POINTS OF VIBRATION).

THE WORLD OF SOUND: THE SCIENTIFIC BASIS OF MUSIC.

DRAWN BY W. B. ROBINSON FROM MATERIAL SUPPLIED BY PROFESSOR W. H. BRAGG, C.B.E., D.Sc., F.R.S., IN ILLUSTRATION OF HIS RECENT LECTURES.



II .- SOUND AND MUSIC: PROFESSOR W. H. BRAGG'S EXPERIMENTS IN HIS SECOND LECTURE AT THE ROYAL INSTITUTION.

Professor Bragg's remarkably interesting lectures on "The World of Sound" were addressed originally to audiences of young people at the Royal Institution. They appeal, however, both to the general reader and, in particular, to all students and teachers of physical science, while the lecture illustrated here has a special interest for musicians, as revealing the scientific principles on which musical sounds are produced. We have arranged with Professor Bragg to write for us an abridgment of each lecture of the

series, to appear in this paper with diagrams illustrating his experiments. His article on the subject of his first lecture, "What is Sound?" was given in our last number, that of January 31, and the remaining articles, similarly illustrated, will follow in future issues. Professor Bragg is about to publish the whole set of lectures, on a more extended scale, in book form, through Messrs. George Bell and Sons, and the volume is likely to command a wide sale.—[Drawing Copyrighted in the United States and Canada.]

ON THE ROYAL AERONAUTICAL SOCIETY.

T is the custom of our learned societies in this country to hide their lights under voluminous bushels, if not actually to hide their heads in the sand. This habit may be kindly ascribed to a feeling of modesty somewhat akin to that of the gentlewoman in reduced circumstances who, having descended to selling apples for a living, sat in an obscure corner of the market-place and cried: "Apples, Apples," in a still, small voice, adding to herself after each appeal for custom: "I do hope nobody will hear me." the other hand, there are those who say unkindly that our learned societies are so aloof from the vulgar many

that they are not interested in luring the public to their meetings, and are more concerned with arguing among themselves about obsolete theories than with inducing people with new ideas to join in their debates. The science and practice of aeronautics being very much matters of the present day, it is natural that the Royal Aeronautical Society should differ considerably from some other societies of analogous nature concerned with other This society was founded in 1860, and so is the oldest aeronautical organisation in the world. Incidentally, it is of interest to note that among its founders was Sir Charles Tilston Bright, M.P., the engineer of the first Atlantic cable, whose son, Sir Charles Brightrecently knighted - was a most active member of the famous Air Inquiry Committee of 1916.

Though the Royal Aeronautical Society is the oldest of its kind, it is composed almost entirely of young men, as is natural, considering that, though the science of the air itself is old, the science of aeroplane and airship construction has come into being within the past nine or ten years, and the vast majority of those who have developed the purely scientific side have only been concerned with it for five or six years. Consequently the papers read at the meetings of the R.Ae.S., and the subsequent debates, are such as to interest all engineers and those interested in engineering problems, for they have not reached the dry-as-dust stage which devastates similar meetings of older societies. The fact that the entertaining nature of these meetings is not better

known is regrettable, but one knows that hitherto the Council, Secretary, and members of the Society have been so busy "getting on with the war "-in which all of them have been intimately concerned either as sailors, soldiers, aviators, or aircraft producers that they have had little or no time to devote to propagating the gospel of aeronautics. It is hoped that in future the Society's activities may become better known to that section of the community at large which has intelligence and uses it. Hence this article, which is written in the knowledge that it will reach quite a large proportion of the intelligent public.

The programme of the Society's lectures for the spring has just been issued by the new secretary of the Society, Lieut. - Col. W. Lockwood Marsh (late R.A.F.), who, during the latter part of the war, held an

important post in the Airship Department. This programme is well worth publishing, for it should tempt many readers of this paper to attend these lectures, which appeal alike to the engineer, the man who is or

hopes to be financially interested in commercial aviation, and the seeker after general knowledge. Visitors are cordially invited to the meetings, which are generally held in the lecture hall of the Society of Arts in John Street, Adelphi, practically next door to the "Little Theatre," and tickets may be obtained gratis from the Secretary at the R.Ae.S. offices, 7, Albemarle Street, W.1.

The next lecture takes place on Feb. 18, and is on the subject of "Aircraft Design in Relation to



A POSTAL AIR SERVICE IN ITALY DURING THE RAIL-WAY STRIKE: LOADING MAILS ON AN AEROPLANE. During the Italian railway strike, postal air services were established between Milan, Pisa, and Rome. Photograph by Photopress.

Standardisation." The lecturer is Major Percy Bishop. a practical engineer of wide experience, and the chairman is Mr. H. White Smith, who is secretary and a director of the British and Colonial Aeroplane Company, Ltd., makers of the famous Bristol aeroplanes. Mr. White Smith is Chairman of the Society of British Aircraft Constructors, and was the representative of the business side of aeronautics at the Peace ConferBy C. G. GREY, Editor of " The Aeroplane."

as commercially as motor-cars or bicycles. Following this is a lecture, on March 3, on "Flying over Clouds in Relation to Commercial Aeronautics." The lecturer is Professor B. Melville Jones, D.Sc., the newly-appointed (and first) Professor of Aeronautics at the University of Cambridge, who conceals under this learned title the personality of Captain Melville Jones, R.A.F., one of the most skilful aeroplane pilots of the war period. His chairman is Lieut.-Col. H., T. Tizard, also an exceptionally able pilot, who during the war carried out at great personal risk experiments with aeroplanes which added much valuable knowledge to

> the practical side of aeronautical science. The appeal of this lecture is rather to those interested in flying as such, than to those concerned with aircraft construction. It should be both instructive and entertaining to navigating officers of the Navy and the Mercantile Marine, for example.

> On March 17, the subject of the lecture is "Airship Machinery, Past Experience and Future Requirements," by Major C. F. Abell, O.B.E., another bright particular star of the Airship Service. The chairman is not yet decided. This lecture naturally concerns engineers more than anybody else. Much is needed in the way of airship machinery for the future: not only are improved engines required, but there is plenty of room for improvement in air-screw gear-

ing and various internal mechanism. Also there is the question of machinery at airship stations to be discussed. Following this is a lecture on April 14, by Lord Montagu of Beaulieu, on "A Comparison of the Cost of Air Ton-Miles with other forms of Transport." This should interest anybody concerned with any form of transport. For example, one might expect the audience to include Sir Eric Geddes - unless he happened to occupy the chair-and such notable persons as Messrs. Carter and Paterson (with or without their Co.) and Mr. Pickford, if they are still with us in the flesh. In any case, everybody who is connected with the dispatch or handling of goods would find food for thought in the subject matter.

Then on April 21, Captain P. D. Acland is to lecture on "Trans-Continental Flying." Captain Acland is the chief of the Aviation Department of Vickers, Ltd., and as

> such has inside knowledge of all the problems which had to be solved to make a success of the trans-Atlantic flight, the journey to Australia, and the journey to Cairo and the Cape. The organisation of ordinary trans-Continental airroutes, when based on experience gained in these great flights, may be considered as a business proposition, and Captain Acland's lecture should appeal directly to the business man. The only purely scientific lecture is that booked for May 26, when Sir Richard Glazebrook, K.C.B., F.R.S., will discourse on "Some Points of Importance in the work of the Advisory Committee for Aeronautics." Sir Richard is a member of the aforesaid Government Advisory Committee for Aeronautics, and he is a scientist of scientists. His lecture should gather together most of the be-lettered theoreticians of to-day and should be of ab-



to Poona (85 miles) in 42 minutes, to deliver the "Illustrated Sunday Advocate." ordinary price being 2 annas (3d.) A copy addressed to the Governor of Bombay, Sir George Lloyd, was received by Lieut.-Gen. Sir William Marshall. No aeroplane had been seen before at Poona, and the flight was the first made over the Western Ghauts.-[Photograph by Photopress.]

> ence in Paris. This lecture should appeal greatly to all engineers and business men who realise that in the not far distant future aircraft will be one of our chief means of transport, and must therefore be produced

sorbing interest to them. Meantime mere ordinarily intelligent men or women will be informed and entertained by the preceding lectures, at which one strongly recommends them to be present.

OUR ALLIES THE LOCUSTS: "DARKENING THE SUN" AT JERUSALEM.

PHOTOGRAPH BY THE AMERICAN COLONY, JERUSALPM.



In his article on another page, Mr. J. D. Whiting, American Vice-Consul at Jerusalem, describes a great plague of locusts which rayaged Palestine and Syria in 1915, and hindered the movement of Turkish troops. "It was towards the end of February," he writes, "that one of our members returned from the picturesque Ain Fara Gorge, a few miles east of Jerusalem, with word that swarms of locusts had flown overhead in such thick clouds as to obscure the sun for the time being. Before they were seen, a loud

noise produced by the flapping of myriads of wings was heard. Immediately afterwards rumours poured in from Es Salt and Bethlehem that similar swarms had also visited them. Several days later the locusts were first seen in Jerusalem. Attention was drawn to them by the sudden darkening of the bright sunshine. At times their elevation was in the hundreds of feet; at other times they came down quite low, detached members alighting. The clouds of them were so dense as to appear quite black."

By JOHN D. WHITING, American Consul at Jerusalem.

"HEAR ye this, ye elders, and give ear, all ye inhabitants of the land—hath this ever happened in your days? Or in the days of your fathers? Concerning it to your children tell ye the story—and your children to their children, and their children to the generation following: That which was left by the creeping locust hath the swarming locust eaten. And that which was left by the swarming locust hath the grass locust eaten. And that which was left by the grass locust hath the corn locust eaten. Awake . and weep and howl . . For a nation hath come up over my land, bold and without number."

Thus the prophet Joel begins his description of a locust plague; and, having witnessed the terrible destruction to crops and fields wrought by these insects in this historic land, one marvels how this ancient writer could have given so graphic and true a description of a devastation caused by locusts in so condensed a form. The modern plague referred to occurred in the

spring and summer of 1915, when Palestine was closed to the outside world by the war. That the locusts helped the Allied cause there is no denying. They ravaged the country from the borders of Egypt to the Taurus Mountains, and were a source of anxiety for many months both to the Turkish authorities and the native population. They consumed every green thing, which meant a serious shortage of food and fodder, greatly militating against the movement of the Turkish forces on both the Egyptian and Mesopotamian fronts.

The locusts arrived towards the end of February (see first full-page illustration). At Bethlehem, millions were brought to the earth by heavy showers. They were gathered by the poorer Bethlehemites, many of whom ate them roasted, describing the taste as delicious. especially the females full of eggs. The main reason, however, for collecting them was to secure the small bonus offered by the local government. Thus tons were destroyed, being buried alive till several ancient cisterns were filled, while in surrounding villages each family was required to produce a stipulated weight. Likewise in Jatfa they were destroyed by being thrown into the Mediterranean, and when washed ashore dead, and dried on the beach, were collected and used as fuel in the public "Turkish Baths"

At once these numberless hosts began to prepare for the destruction that was to follow

Their eggs were found on the banks of the River Jordan, in the salt marshes of the Dead Sea, on the highest mountains, in the valleys, in the beautiful olive groves about Bethlehem, in the orange orchards of Jatta, and on the sea coast at Tyre, Sidon, and Gaza; in fact, they were found in all parts of the country from Dan to Beersheba. Once the alarming extent to which these eggs were kild was realised, the authorities made a proclamation, requiring each male person from sixteen years to sixty to gather

cleven pounds' weight. To be the first to set a good example, the young men of the American Colony at once set out upon the work of collecting, for so steeped are the natives in fatalism (Allah had sent the jarad—locusts—and they are helpless to fight them) that, unless forced or shown how to, few would turn a finger in self-defence. It is estimated by competent authorities that as many as 65,000 to 75,000 locust eggs are concentrated in a square metre of soil. Allowing for a loss of 30 per cent. in hatching, some 60,000 destroyers can emerge from a space thirty-nine inches square.

Locusts are not, however, without their own enemies provided by nature. Large flocks of storks flew past Jerusalem during the early days when the adults arrived and after the larvæ were hatched, consuming abnormal quantities, for which reason the natives have always given "Abo Saad" a warm welcome.

Scarcely had Jerusalem got over the excitement of the search for eggs, than word poured in that the

country was teeming with the young larvæ. (For a description of the *pupa* and final stage, see the second full page of illustrations.)

None but those who have seen them can imagine their countless multitudes and the destruction they wrought. Hearing one evening that they had already reached the German Colony and the railway station to the south of the Holy City, we went out the next day to see them. Scarcely had our carriage swung round from the Jaffa Gate than we found the white road already black with them. Ever in the same direction they pushed up the "Western Hill," still commonly called Zion, even entering the houses about the "Tomb of David." The roads now became so slippery from the masses of the little greasy bodies crushed beneath the horses' hoofs, that the latter could scarcely keep a footing, and had consequently to be driven slowly and with great care. Trains throughout the country were stopped for hours at a time, notably

TURNING THE DARK-CREEN FOLIAGE TO RED: NEWLY MOULTED LOCUSTS SETTLING FOR THE NIGHT ON AN OLIVE-TREE, AT JERUSALEM.

"Towards evening they settled for the night by myriads upon the olive-trees, almost covering them and transforming the dark-green foliage into a distinctive red appearance. At once they attacked the small berries, which fell to the ground like hail, and as the filers wrought destruction above, the crawlers devoured what fell below. Between the two they stripped every leaf, berry, and even the tender bark, leaving only, where such existed, the green tufts of the poisonous mistletce."

Photograph by the American Colony, Jerusalem.

on the Damascus-Haifa line near the Lake of Galilee. Countless numbers of them poured into the broad walled road leading into Jerusalem from the west, past the United States Consulate to the Jaffa Gate. At the Consulate the fight was taken up to save the garden. It lay in the main path of the locusts. The enclosure, about the size of an ordinary city lot, required five men to keep incessantly brushing the locusts down from the walls on the three sides attacked.

The whole city of Jerusalem, with the exception of the portion within the walls, fell a prey to the ravages of the locusts, while the entire land "from Dan to Beersheba" was laid desolate.

Disastrous as they were in the country, equally obnoxious they became about the houses, crawling up thick upon the walls, and, squeezing in through cracks of closed doors or windows, entering the very dwelling-rooms. Women frantically swept the walls and roofs, but to no avail. In Nazareth it required

several hundred men to sweep together and destroy the locusts, and eight donkeys to carry away to near-by fields the miniature carcases. Stores were closed, and some houses even abandoned. About our houses in Jerusalem they became so thick that one could not help' crushing them with every step. They even fell into one's shirt collar from the walls above, and crawled up on to one's person. Whenever touched, or especially when finding themselves caught within one's clothes, they exuded from their mouths a dark fluid, an irritant to the skin and soiling the garments in a most disgusting manner.

A few words of our personal experience fighting the locusts may not be amiss. (See fourth full page of illustrations.) One evening while trapping them on the upper side of the hill, it was found just in time that an immense number were about to enter the property being protected from the opposite side. At once all efforts were turned in this direction. The

trap was sunk into the lower edge of the field towards which they were making. But no sooner had it been set in place than it was seen that meanwhile they had changed their course, and, notwithstanding the laborious task involved, the trap had to be changed, during which time it was "nip and tuck "to keep them from escaping. Once, however, they made in the right direction, they jumped, hundreds at a time, into the trap. The evening hours were now upon us; the locusts. weary from being driven and benumbed from the cool breezes, seemed to near the trap exhausted, To facilitate matters, with spade and rake they were scraped into the trap, now constantly being emptied. Thus in about an hour's time four large sacks full were caught and destroyed, each containing. by actual count and weight, no less than 100,000 of these insects. Many escaped and made for a near-by thorny patch, on which was now piled more dry sticks and thistles, and when set afire burned alive many thousands more The above is but an average example showing how and in what quantities they were caught.

In the early days of June, a few scattered locusts of a decided red colour were seen about the tree-tops. Some supposed them to be a kind of grasshopper, for they were so different in colour from the fliers that first came and laid their eggs that it was difficult to detect in them the resemblance to the parents. A few days later the air was filled with quantities of these new flying locusts with the thin transparent wings, producing the effect of a large-flaked snow-storm. It was at first hard to realise that these had not, as most supposed, flown in from elsewhere, but right under our eyes had been transformed from the small creeping locusts. millions of which we had destroyed.

had suffered comparatively little. The creeping locusts had not seemed to care for the tough, bitter leaves. But now that

these ravenously hungry, freshly-moulted fliers appeared, food had already become scarcer, obliging the crawlers to seek the heretofore despised olive, creeping up the trunks layers deep.

Likewise, every variety of tree was attacked and stripped, with the sole exception of the Persian lilac and the oleander bushes. The succulent cactus they seemed very fond of, but instead of commencing on the edge of the large leaves, they ate away layer after later over the whole surface, giving the leaves the effect of having been jackplaned. Even on the scarce and prized palms they had no pity.

The devastation was complete. All vegetables and fruits disappeared as by magic. Olives and olive oil were almost unobtainable. Had it not been for the arrival of a ship-load of flour and other food commodities from America, the condition of the populace would have been serious.

THE BIRTH OF A LOCUST: FROM PUPA TO FULL-FLEDGED INSECT.

PHOTOGRAPHS BY THE AMERICAN COLONY AT JERUSALEM.



WITH WINGS NEATLY FOLDED IN MEMBRANOUS CASES RESEMBLING TINY WINGS: A PUPA JUST BEFORE THE PROCESS OF TRANSFORMATION BEGINS.



THIRD STAGE: RAPIDLY CURVING ITS BODY, THE NEW INSECT DISCARDS ITS OLD SHELL.



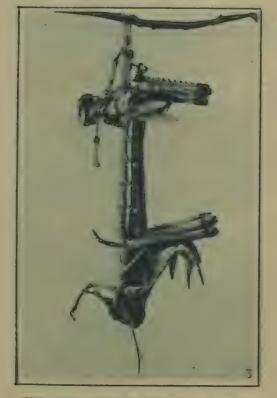
SHEDDING THE NYMPH SKIN—FIRST STAGE: WINGS AND SMALL LEGS FREE.



HOLLOW THROUGHOUT, TO THE TIPS OF THE ANTENNAE: THE DISCARDED SHELL.



AFTER SEVERAL HOURS' WORK BY THE HIND LEGS: THE WINGS ALMOST DRY.



SHEDDING THE NYMPH SKIN—SECOND STAGE: HIND LEGS NOW FREE.



THE LOCUST DRYING ITS WINGS: THE LONG HIND LEGS SMOOTHING OUT THE CREASES.



THE BIRTH OF A LOCUST COMPLETED: WITH WINGS DRY READY FOR FLIGHT.

The birth of the locust is a wonderful process. "The males and females," writes Mr. J. D. Whiting, "are readily distinguished, for the males are by far the handsomer. Each female, loaded with eggs, seeks a place to deposit them, and with her ovipositors can sink a hole 4 inches deep through hard, compact soil. The eggs, averaging about 100, are deposited, not haphazard, but neatly arranged in a long cylindrical mass. It is estimated that as many as 65,000 to 75,000 locust eggs are concentrated in a square

metre (31 feet) of soil. Allowing for a loss of 30 per cent. in hatching, some 60,000 locusts can emerge from a space 39 inches square. When first hatched they were quite black and resembled large ants, having no sign of wings; but, as they developed, they cast their little outer skins. Thus they pass through several moults, of which, however, but three stages are plainly distinguishable—the larva, or wingless stage; the pupa, with small wings (or, properly, wing-sacks developing); and the full-fledged flying locust."

LOCUSTS RAVAGE THE GARDEN OF GETHSEMANE: BEFORE AND AFTER.

PHOTOGRAPHS BY THE AMERICAN COLONY, JERUSALPM.



BEFORE THE COMING OF THE LOCUSTS: THE TRADITIONAL SCENE OF THE "AGONY"-GETHSEMANE IN ITS FULL SUMMER BLOOM.



AFTER THE LOCUSTS HAD PASSED: THE GARDEN OF GETHSEMANE WITH ITS FLOWER-BEDS STRIPPED BARE BY THE ALL-DEVOURING SWARM.

"It was the 28th of May, 1915," writes Mr. J. D. Whiting, "when the larvac, already transforming themselves into the pupa stage, reached the quiet of Gethsemane, then in its full summer bloom, but scarcely a day passed before every tender thing was consumed, and even the leaves of the woody cypress and of the olive trees—the latter about 1000 years old—were threatened. The whole city of Jerusalem, except the portion within the walls, fell a prey to the ravages of the locusts, while the entire land from Dan to

Beersheba' was laid desolate. Fortunately, by the time the young broods had hatched, a large part of the grain crops had already been gathered, but the fruit and summer crops were ruined. . . When once the locusts entered a vineyard the sprawling vines would in the shortest time be nothing but bare bark. Fig leaves perhaps of all things best suited their taste, and when once a tree fell a prey to them the ground would be literally layers deep, and the trunk so covered with crawlers as to make it a bright yellow colour."

FIGHTING LOCUSTS WITH SHADOWS: AN AMERICAN PARTY OF TRAPPERS.

PHOTOGRAPHS BY THE AMERICAN COLONY, JERUSALEM.



WAVING DARK FLAGS WHOSE SHADOWS DROVE THE INSECTS TOWARDS A BOTTOMLESS BOX SUNK IN THE GROUND: MEMBERS OF THE AMERICAN COLONY IN JERUSALEM TRAPPING LOCUSTS.

few words," writes Mr. J. D. Whiting, "of our personal experience in fighting the locusts may not be amiss. At first, having already marched a considerable distance from the place of hatching, they were found in endless columns. It was now easy to entrap them. In their path would be sunk a bottomless box, with the inside lined with shining tin up which the locusts cannot crawl, while on each side a wing was provided, similarly prepared with a smooth metal face, with the object of directing them into the box. The fighters now make two long lines, one on each side of the trap. To noise and racket the locusts seemed only to turn a deaf ear, but a large flag-the darker the betterwith which to cast a deep shadow on the ground, proved to be the most formidable weapon one could employ to make them move in the desired direction. In fact, countless numbers could thus be guided and held in

BURIED ALIVE BY THE MILLION: THE BOTTOMLESS BOX FULL OF LOCUSTS (LEFT IN THE PIT WHEN IT WAS LIFTED OUT, AND COVERED WITH EARTH).

check if one but anticipated the general direction they wished to go. Now and then the trap would have to be emptied, or, if the place was to be abandoned in favour of a better position, it was easy, when the bottomless box was almost full, to raise it out of the ground, leaving the locusts behind in the hole, and then hurriedly to bury the contents. It was found by actual tests that when thus buried in great masses they quickly died. As the evening advanced, they became sluggish and hard to move, and would crawl under individual stones or into small piles of rock; but by the morning again instinct would have rejoined them into bands moving together on their campaign of destruction. Thus it was unnecessary to fight them in the late evenings or early morning. Towards the end of their pupa stage their columns became shorter and less constant, and it was more troublesome to trap them, as they had grown large and

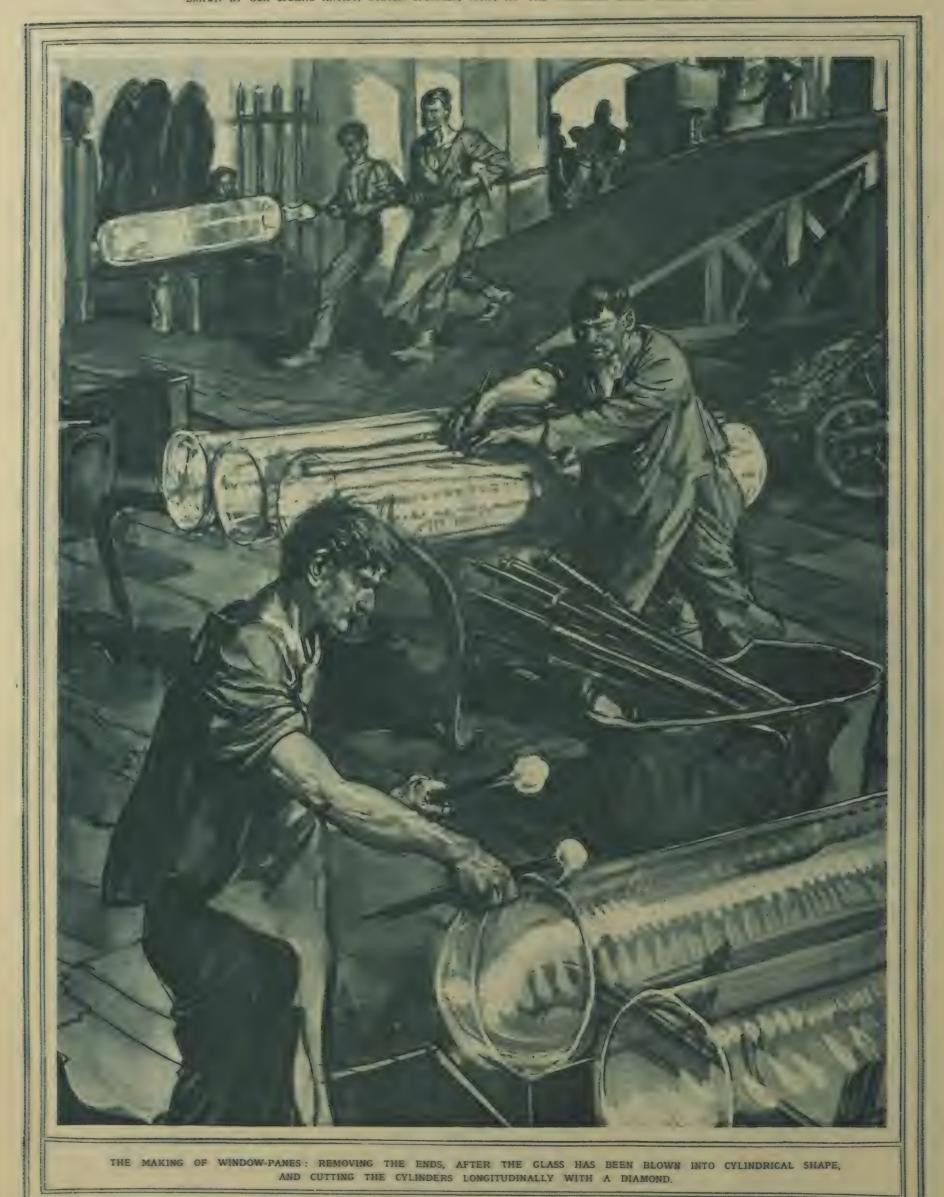
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wary. Often they would become alarmed and, turning tail, escape in all directions. . . . To overcome the difficulty of the labour and time required in shifting the sunken trap, Yankee ingenuity again came to the rescue. An old box, tin-lined, was set on top of the ground with an inclined plane leading up to it. The locusts, which can make ascents so much more easily than descents, were driven into it just as readily as into the sunken trap. It was so quickly and easily placed that it proved to be a great success, the only

drawback, as with the older type, being the labour of emptying it and the numbers that unavoidably escaped. The next development was a tin hopper set on legs high enough to admit of fastening a sack below. To this the inclined plane was similarly attached. Thus the locusts jumped directly into the bag, which when full was detached and replaced with another. After over two weeks' steady and relentless work, the fight to save the fields was given up, and efforts concentrated upon protecting our homes and garden plots."

FROM BLOW-PIPE TO DIAMOND: CYLINDERS FOR SHEET GLASS.

DRAWN BY OUR SPECIAL ARTIST, STEVEN SPURRIER, R.O.I., AT THE WILLESDEN GLASS COMPANY'S WORKS.



On this and succeeding pages we illustrate the process of making sheet glass, an industry now developing in this country. The initial stage of the operations, the actual blowing of the molten glass into the form of hollow cylinders with closed ends, is illustrated in the double-page drawing. Above is seen the next stage. In the background a blower and his assistant are carrying a cylinder down a sloping platform (shown in the double-page drawing on the extreme right). They place it on the bench in the foreground, where it is kept in position by wooden wedges. The end of the cylinder attached

to the blow-pipe is removed, and then the other end is knocked off, a ring of molten glass being first smeared round the line of cleavage to prevent splitting. A man is seen making this ring with a lump of material on a short stick. When both ends of the cylinders have thus been opened, they are placed, usually three at a time, on a bench and are cut longitudinally with a diamond, as shown in the centre. Wedges are fixed in the cut, to keep it open. The cylinder then goes to the bending-oven to be flattened, as illustrated in the next page.—[Drawing Copyrighted in the United States and Canada.]

FROM CYLINDER TO FLAT SHEET: GLASS IN THE BENDING-OVEN.

DRAWN BY OUR SPECIAL ARTIST, STEVEN SPURRIER, R.O.1, AT THE WILLESDEN GLASS COMPANY'S WORKS.



In the previous drawing the hollow cylinders of glass formed by blowing were seen having their closed ends removed and being cut longitudinally with a diamond. They are then brought to the bending-oven (shown above) to be flattened. Inside the oven is an iron table with a stone top, which is moved to and fro on wheels by the man in the foreground by means of the long rod seen beside him. In the left background another man is placing cylinders on a framework which twists round and inserts them into the oven. At the door of the oven, in the centre, is an ironer, who levers the cylinder off

the framework on to the table, and then proceeds to flatten it out with a long iron-handled tool having at the end a block of wood soaked in water. On both sides of the oven are flues. When the cylinder has been flattened, the man in the foreground pushes the table back to the cooler end of the oven, and the ironer goes round to the right-hand side (out of the drawing) and levers the glass off the table with the long iron tool seen on the floor on the extreme right. The flat sheet is passed out of the oven, to the left, by mechanical means and gradually cooled.—[Drawing Copyrighted in the United States and Canada.]

FROM GLOBULAR MASS TO HOLLOW CYLINDER: THE HUMAN WIND-PIPE AS AN APPARATUS FOR BLOWING GLASS.

DRAWN BY OUR SPECIAL ARTIST, STEVEN SPURRIER, R.O.L. AT THE WILLESDEN GLASS COMPANY'S WORKS.



THE MANUFACTURE OF SHEET GLASS: THE MAKING OF THE CYLINDER WHICH IS AFTERWARDS "IRONED" FLAT-FOUR STAGES IN THE USE OF THE BLOWING-TUBE.

As a result of the war and the destruction of factories during the German invasion of Belgium, the glass-making industry is developing in this country. Our artist's drawings were made at the Atlas Works of the Willesden Glass Company, Ltd., Victoria Road, N.W.10. The above illustration shows the initial process of blowing molter glass into hollow cylinders, which are afterwards flattened out into sheets. In the background are the furnaces in which lumps of the material, attached to the ends of blowing-tubes, are heated into a sufficiently soft state to be blown. The first stage of blowing is represented by the man in the right centre, cooling his blowing-tube under a tap which drips into a small shundler shape. It is then taken back to the furnace

and heated again. The second stage is shown by the man next to the left, blowing down the tube and turning it round, so that the glass (now pear-shaped) revolves in a hollowedown blobec of wood. The third stage is illustrated on the extreme left, where another man is turning and swinging his tube to and for over a pit (to give free space for the movement), the glass being now in a straight, cylindrical form. This man is not at the moment blowing down his tube. The fourth stage appears on the right, where a blower is holding his cylinder while an assistant (extreme right) fixes a lump of molten glass to the further end. This done, the cylinder is carried down the sloping platform (extreme right) to another part of the factory for finishing and cutting, as illustrated in the first of the two-ceeding single-page drawings.—Chopyistad in the trude state and creating, as

THE NATIONAL GALLERY AND THE "UNACADEMIC": A WHISTLER.



THE GENIUS OF WHISTLER AT LAST REPRESENTED IN THE NATION'S ART COLLECTION: "THE LITTLE WHITE GIRL";
RECENTLY HUNG IN THE NATIONAL GALLERY.

Under the wise direction of Mr. C. J. Holmes, the National Gallery is becoming modernised, in the sense that it is recognising, by acquisition of examples of their work, the genius of painters like Whistler and Manet, who broke away from academic traditions, and long suffered under a cloud of detraction. In our last issue we reproduced two fragments by Manet, purchased by the Trustees in 1918, and recently placed on view in the French Room. The National Gallery now also contains Whistler's portrait of "The Little White Girl," which has been presented by a generous private benefactor. "Having waited

twenty years and longer for the Manet and the Whistler," writes Mr. Frank Rutter, the art critic, "let us hope that long before 1940 our Traialgar Square treasure-house will also have its Cézanne and Van Gogh." James McNeill Whistler was born in 1834, in America, and died in 1903. He settled in London in 1859. Ruskin, in "Fors Clavigera," violently denounced his work, and Whistler brought a libel action against him in 1877, claiming £1000, but obtained only the symbolic "farthing" damages. Whistler describes the trial in his own book, "The Gentle Art of Making Enemies."

Beagling.

Game little tykes!

Ten or twelve miles across country and an end of Puss!

Great exercise! It makes one realise how good it is that the homeward journey will be covered speedily and securely by the car with its trusty Dunlop tyres biting through the mud and grease to the road surface beneath.

DUNLOP RUBBER CO., LTD., Founders of the Pneumatic Tyre Industry, Para Mills, Aston Cross, BIRMINGHAM. LONDON: 14, Regent Street, S.W.1. PARIS: 4, Rue du Colonel Moll.



BOOKS OF THE DAY

or Shere

IN "RECOLLECTIONS OF LADY GEORGIANA
PEEL" (John Lane; 16s. net), compiled by her daughter, Ethel Peel, we are back again in a world, almost unthinkable in these democratic

days, in which our present political lords and masters were "the lower classes," and no nonsense about it!

Lady Georgiana Peel's famous father is naturally and necessarily the protagonist in a book which, though said to be "compiled," is not at all in the nature of a compilation. Excepting where excerpts are given from the histories of politics and from family records, in order to verify references and add substance to shadowy memories, we seem to be listening all the time to the living voice of "Lord John's" loving daughter. We are told of the cold and distant manner of the Russells in a passage which leads up to Lord Lytton's malicious lines on Lord John Russell himself;

How formed to lead, if not too proud to please, His fame would fire you, but his manners freeze. Like or dislike, he does not care a jot, He wants your vote, but your affections not.

From many other sources we learn about the icy demeanour of the Russells, so many of whom seem to have looked on politics as a form of mathematicsuntil, at the long last, Mr. Bertrand Russell arrived to make pure mathematics very like a political game, in which Euclid is caballed against by his own straight lines and straightforward axioms. But, at any rate in the case of "Lord John," this outward chilliness served but to conceal a warm heart and real kindliness of disposition from those who were anxious to take advantage of them. Some of the innumerable anecdotes set down by Miss Ethel Peel tend to confirm the saying that every really great man has a touch of the child in him-in fact, never quite grows up. Such is the story of Lord John Russell's rhyming catalogue of the months—a literary curiosity never before printed or even written, for the statesman learnt it from his mother's lips and taught it to his children by word of mouth. It runs: "January-snowy. Februaryflowy. March-blowy. April-showery. May-flowery. June-bowery. July-beauty. August-fruity. September-shooty. October-breezy. November-sneezy. December freezy."

The radical difference—less obvious now that a violent rancour is infecting public life in this country—between the English and French political systems, is revealed in the story of Thiers' amazement at seeing Lord John Russell and Lord Stanley, who were political antagonists, engaged in friendly conversation at a London party. Lord John never regarded his bitterest political opponents as personal enemies, and with many of them, indeed, he was on the friendliest terms. It is much more difficult nowadays to keep up this old custom, but even the extreme Labour men—witness



MR. WYNDHAM LEWIS, WHOSE PAMPHLET, "THE CALIPH'S DESIGN," APPEARED RECENTLY, AND A PORTFOLIO OF WHOSE DRAWINGS THE OVID PRESS HAS JUST ISSUED.

the personal relations between Mr. Smillie and the Duke of Northumberland—are now beginning to see its advantages.

By E. B. OSBORN.

Many other historic personages appear and reappear in this vivid chronicle of a social order that has vanished for ever. We have a glimpse of Lady Georgiana as a child and her little sister watching Queen Victoria's long fair hair being brushed (this was before her marriage), and of the Queen jumping up and taking the children's hands and dancing round the room with them. "The Duke" (Wellington, of course) enters in his old age, shakes hands with his hostess at some great reception, and saunters through the rooms without saying a word to anybody, knowing that all the



REAR-ADMIRAL SIR DOUGLAS BROWNRIGG, WHOSE BOOK, "INDISCRETIONS OF THE NAVAL CENSOR," HAS JUST BEEN PUBLISHED.—[Photograph by Histal.]

other guests would feel sufficiently honoured by the fact that he had exerted himself to attend. There were bores abroad in those days of a pertinacity and ponderosity unknown to later generations. Macaulay ("that talk mill," according to Sydney Smith, who often appears in these pages to tell some familiar tale) is the amplest specimen here introduced. Lady Georgiana's sister would tell a story of how, on coming down to dinner, she found Macaulay, the first guest to arrive, declaiming to her little seven-year-old son as if he were the whole dinner party. On one occasion at Pembroke Lodge his spate of talk suddenly ceased, the cause being the extreme stickiness of the pudding. Macaulay, as I was once told by a very old but vivacious gentleman, had achieved the "disgusting miracle" of being able to talk fluently and eat vigorously at the same time. Disraeli himself was almost as wearisome to a young girl who thought she ought to be entertained by the man who took her in to dinner. When Lady Georgiana had that good fortune at a great party, she admired his shirt-front of book muslin over a very bright rose-coloured satin foundation, which shone through it, but found his manner too theatrical and his conversation too often addressed to the whole table instead of to her vivacious self.

A number of interesting verse-books have lately been published. It has long been clear the appeal of poetry is far wider than it was in pre-war days. Perhaps the most appealing of half-a-dozen volumes in hand is "THE POEMS OF GILBERT WHITE" (S.P.C.K.; 6s. net), which has an introduction by Sir Herbert Warren, formerly Professor of Poetry at Oxford. Bishop Gilbert White's life as a voyaging missionary has been a sacred Odyssey, and there are no better pictures of the Southern Seas and the islands therein with their coral-girt lagoons, beneath the glassy surface of which a veritable undersea paradise can be discerned in an intenser day, than those which are to be found in his two travel-books. In his poems, which show no virtuosity of technique, the secrets of tropical seas and weird wildernesses are interpreted in the light of his Fortezza ed umilitade e largo core,

and the note of all his interpretations is an abiding sense of the Divine purpose immanent in all things.

He has written some wonderful impressions of the silent and austere Blue Mountains, in which he reads the "strange-scrawled" story of Australia's evolution and of the

making of the Pacific, which is said by the students of planetary physics (the science established on a firm basis of theory and computation by the late G. H. Darwin) to represent the great scar left by the breaking-away many millions of years ago of the huge fragment which we now see as the Moon.

A volume of essays by another brilliant son of Charles Darwin might be defined as the work of a botanical Montaigne. "Springtime and Other Essays" (John Murray; 7s. 6d. net), by Sir Francis Darwin, contains, among other entertaining personalia, a brief account of the author's boyhood. He was born in 1848, and surely has a right to look back along his busy career and

To entertain the lag-end of his life With quiet hours.

But we could wish he had been as explicit about the famous visitors to Down as Thomas Hearne (1678-1735). whose Diary is the subject of another essay, was about some of the great men he met. Thus Hearne quaintly observes of Newton: "Sir Isaac was a man of no promising aspect. He was a short well-set man. He was full of thought and spoke very little in company, so that his conversation was not agreeable. When he rode in his coach, one arm would be out of the coach on one side and the other on the other." "Some Names of Characters in Fiction" shows an exact and illuminating knowledge of the curious minor art of nomenclature-complicated in these days by the danger of a libel action—as practised by Thackeray, Dickens, and Sir Walter Scott. Thackeray, Sir Francis Darwin thinks, was the cleverest of all three in inventing fictitious names of a humorous actuality. Take, for instance, the list of distinguished guests at one of Becky's great dinner parties-Duchess of Stilton, Duc de la Gruyère, Marchioness of Cheshire, Marchese Alessandro Stracchino, Comte de la Brie, Baron Schapzuger, and Chevalier Tosti. It never occurred to me, till I read this essay, that all these aristocratic guests were entitled to say: "Ain't I the cheese?" But they are all cheeses, and the Chevalier, who is whipper-in, is merely toasted cheese! In a note to this essay, a story, new to me, is told of the Judge who tried Thurtell, the murderer, whose name is given to a partner in the firm of Becky's solicitors. This Judge, hearing that Thurtell ate a hearty supper after the murder, exclaimed: "Commit a murder and eat six pork chops! Good God, what dreams the man must have had!" Fancy going out to kill somebody just to get an appetite for pork!



GENERAL VON LETTOW-VORBECK, WHOSE BOOK, "MY REMINISCENCES OF EAST AFRICA," WILL BE PUBLISHED SHORTLY BY MESSRS. HURST AND BLACKETT.

THE ESTABLISHED FACT

The Brief History of a great British Industrial enterprise and the birth of an important National achievement.

F you investigate any great industrial accomplishment, trace it to its source, you will find that it was mostly born of sheer necessity. Many notable achievements have been conceived by brilliant brains and relin-quished half-completed, but herein is a brief story of one of the greatest propositions man ever imagined; undertaken with courage and conviction, and carried through with unmis-takable precision and success.

Progress makes a fresh demand of man with the dawn of each day.
Yesterday is ever vanishing to-day; and to-morrow continues to bring a higher watermark of progress. It is necesmark of progress. It is necessary to do more than merely keep pace with progress of our competitors-we must anticipate their next move and then move first! Competition and progress are twins; they move together and with each advance a new opportunity is afforded for a new invention and another industrial accomplishment. The final word has not yet been said upon every subject; the last idea still remains to be developed in every branch of art, science or industry. The universe is continually demanding new

methods, revised systems and better ways, and whenever these demands manifest themselves, almost simultaneously the germ idea of another fine achievement

Some years before the war people looked wonderingly at the American car which was at that time invading our markets in vastly increasing numbers. It was then an estab-lished fact that America had succeeded in producing good motor-cars at prices which were in some cases less than half the cost of equal-power, equal-capacity cars of British manufacturers. The American invasion then manufacturers. The American invasion then started in deadly earnest, encouraged by the British public, who welcomed the moderately priced American. product. The import very rapidly increased, unchecked by any form of legislative control. Then the question was heard: "Why can't Britain build cars like America, efficient but inexpensive?" That question remained unexpensive right up to the question remained unanswered right up to the date when war intervened. Nevertheless, the undeniable fact that America had beaten



Britain at a typically British industry made

its impression.

But leadership is only permanent until someone overtakes the leader, and so it was that Sir William Angus, Sanderson and Com-pany, Ltd., determined not only to equal any American achievement in car production, but to set up a new standard, so much better that the laurels would once more come back to this country.

The Angus-Sanderson 14-h.p. De Luxe was the conception. It is to-day an established fact, and sheer necessity was responsible for its production—the necessity for us to produce cars not merely as well but better than America at the same price. The result achieved marks another milestone in the history of the motorcar industry. The success of this result is

better told in the words of men whose names in automobile circles stand for experience, knowledge, and the authority, therefore, to give their opinions.

Mr. S. F. Edge, whose name one can connect with the very pioneer days of the industry, and which has been associated with some of the greatest motor-car successes, recently wrote of the Angus-Sanderson car, in the Auto, Oct. 23, 1919, as follows:—
"I really cannot remember a more satisfac-

remarkable opinion voiced by Captain E. de Normanville, writing in the Daily Express, November, 1919, as follows: required, it is to be found in the following

There is only one way on which to base the comparative judgment of cars, and that is on the value one gets for the money expended. On this basis there is no car in the world which takes prior place to the Angus-Sanderson. There is no equivocation about that statement.

> From these three emphatic opinions one gathers, apart from unanimous approval of the Angus-Sanderson car as a thoroughly sound engineering proposition, an agreement in views as to the astoundingly good value for money which the car represents.

Why is it, then, that one body can produce so much greater value for money than another? Why is it that the Angus-Sanderson is so high in quality and yet moderate in price? There's a reason. The reason lies purely in the great basic method which governs the entire manufacture of the car. It is the basis of specialisation.

The same logic that argues the sense and economy of allocating the building of a battleship to numerous firms, one responsible for the hull, another for the engines, another for the armament, and still scores of others for the various and illimit-

able equipment therein, applies with equal measure of soundness to car-production. Herein, then, lies the great basic secret of the Angus-Sanderson success. It is the com-bined result of several specialists in the building of component parts. The power unit, for example, is the best that Messrs. J. Tylor and Co., the engine specialists, of King's Cross and Southgate, can produce. The entire transmission unit—gear-box, back axle, etc.—is produced by Messrs. E. G. Wrigley and Co., Ltd.; of Birmingham. The electrical equipment is also undertaken by a separate firm, while the bodywork and general assembly of the complete car is in the hands of Sir William Angus, Sanderson and Co., Ltd.

The advantages accraining from the above

The advantages accruing from the above system of production are numerous. To the general goodness of one product is concen-



trated the efforts of not only individual experts but whole organisations of experts in the proits various parts. The Angus-Sanderson car two years ago was merely a blue-print proposition. The close of the war saw a print proposition. The close of the war saw a thousand and one preliminary operations going ahead towards its projected production in numbers. The car made its bow to the industry, demonstrated its capabilities: won the immediate support of every expert, as well as the great and not-easy-to-conviace element of trade dealers. To-day it is a soundly established fact—it is a popular car, with a popular name and popular price. It has sucpopular name and popular price. It has successfully emerged from all the most stringent tests to which a car can and must be put.



tory ride in a car, of no matter what wheelbase or price. It was emphatically the sweetest running and best-sprung car, judged from the rear seat, in which ever I have driven. Its suspension was a revelation. This car is a real competitor with the best examples of value for money which America or any other country can send us, and I look confidently forward to seeing it do a great deal to rehabili-tate British motor engineering in the opinion of buyers overseas."

This, the unbiassed opinion of so high an authority, means more when one considers the strength and broadness of statement contained in the last paragraph, made entirely without qualification. Britain at last has produced a car to compete with that which America or any other country can make—the car best fitted to go to any corner of the earth as the representative product of the British motor

And now take the consummation of opinion of Captain W. G. Aston, R.A.F., who, writing

in the Irish Field, Nov. 1, 1919, stated:—
"I do not think I am overstepping the bounds of strict truth when I say that, all things considered, it is the finest four-cylinder motor-car of which I have had any experience and that, mark you, without reference to price, size, power, weight, or anything else."

This latter sweeping assertion over the signature of another expert of such recognised authority, leaves no vestige of doubt as to the soundness of the Angus-Sanderson production, but if further expert testimony were



BIRTLEY - - CO. DURHAM.

EXTENSIVE ANGUS-SANDERSON WORKS AT BIRTLEY.



LADIES' NEWS.

MEMBERS of Parliament, Magistrates, Freemen, Barristers, Doctors, the only things apparently that our sex may not be is fighters or preachers. The former we do not hanker after; the latter only a very few of us would make a real good job of, talkers though we be! St. Paul did a bad turn to women who look to the pulpit with envious eyes. It seems evident that St. Paul, though he may not have been exactly a woman-hater, must have strongly distrusted our sex. George Eliot created one wonderful woman preacher in fiction, and Miss Maud Royden does remarkably well in the pulpit in real life. In some ritualistic churches and in Roman Catholic churches, women might sooner be allowed to invade the pulpit than the chancel. One fancies that they would be useful in admonishing women.

Hunting has not had too flourishing a time of it the first season after the war. Frost spoiled the opening part of it, then came accidents due to the bad going that put at least three Masters out of the saddle-the Duke of Beaufort, the Earl of Lonsdale, and Earl Winterton. Then the floods descended, and made the going so heavy that mounts were severely tried. Colonel Seymour, Master of the West Norfolk, seems to have had better luck than some, although one at least of his important fixtures was postponed, and the Heir Apparent and Princess Mary had to motor back to Sandringham disappointed of their hunt. The spirit of hunting is unconquerable, however, and the old sport has gone gaily despite all drawbacks. The Melton district is perhaps the least interfered with by weather conditions. Cheshire and Warwickshire have also done well in good runs. Footand-mouth disease has also deprived a hunt or two of some of their country.

Irish girls have wonderful complexions. We might believe that the damp, soft climate bestowed them if it also gave them to Irish men, but it doesn't. They may be "clane skinned bhoys," but their complexions are no better than English or Scotch men possess. Of course, they don't bother about them, and girls do. That is just where the difference lies. The colleens don't smoke and drink, they use "Colleen Soap," which is made from pure, skin-nourishing vegetable oils, saponified with the ash of soft-growing plants. It has a fine reputation for maintaining the skin charms of early girlhood. There are many other preparations by McClinton, Donaghmore,



She chose black satin to show off the whiteness of her neck and arms, and then decided to finish off the panier with soft lace and soften the severity of the neck with a touch of chiffon.

Co. Tyrone, all calculated to give women real colleen complexions, with which none other can compare.

The great talk about the coming change in fashion will cause many intrepid women to adventure themselves into what they believe the right thing will be. It will be bravery rewarded by laughter in instances where the undertaking is done by a little dressmaker who dashes at it, and so really earns the title of undertaker rather than dressmaker. There are 'cute women who have the real flair for dress, who will find out the essentials of a coming mode, and with clever maids and their own clever heads turn out frocks which will be in it. A leader, however, who exploits successfully the latest and greatest change, will, an she be wise, do so only when the costume has been created by a genius and made by the best skill of Paris or London, the dressmaking centres of the world.

There is the usual "pre-war" speculation about who will enter the lists as hostesses on a large scale during the coming season. There is also speculation, which is not of "pre-war" nature, as to what political parties the coming great parties will be for? The Duchess of Devonshire will probably be back in good time for the season proper. There are rumours that her Grace will entertain at Lansdowne House. Lord and Lady Lansdowne are not feeling up to take the part they did before the war, and in any case would lend their town house to their daughter for her daughter's wedding, as they did for Lady Blanche Cobbold's marriage. The Duchess of Devonshire is a great lady by birth and by training. Devonshire House was always far from ideal for entertaining; Lansdowne House has all that it has not; therefore it is quite on the cards that we may see some big private parties at Lansdowne House. Wimborne House will, it is hoped, be clear of workmen before the season. Lord and Lady Granard are back at Forbes House, an excellent mansion for entertaining. Lord and Lady Carnarvon, who have gone to India, hope to be back for the season and to have the house left to them by the late Mrs. Alfred de Rothschild in Seamore Place ready for their occupation. Extensive work is now going on there. The Duke and Duchess of Sutherland hope to be in Hampden House, Green Street, where they will entertain. There, also, extensive and structural alterations are in progress, including the making of a couple of tennis-courts. Hampden House stands on an unusual amount of ground for a. London residence, and has quite a fair-sized garden at the back. Lord and Lady Londonderry have a house historic in the annals of great hospitality. Altogether, the entertaining prospects for the first season of Peace ratified are excellent.





NEW NOVELS.

"Felix
Morgaine."

Morgaine."

(Methuen) would be one of the books of the moment. That critical and intelligent people have not overlooked it we have no doubt, nor that a certain amount of argument "about it and about" has been raised where two or three of this happy kind are gathered together. It is a novel in a hurry, bubbling over with ideas on Miss Josephine Knowles's chosen subject—ideas so numerous that she seems hardly to know how to cram them into her text. It is not guiltless of wild inaccuracies, as when she attributes



ARRIVED IN ENGLAND TO ARRANGE THEIR WEDDING: LADY DOROTHY CAVENDISH AND HER FIANCÉ, CAPTAIN MACMILLAN.

Lady Dorothy Cavendish, third daughter of the Duke and Duchess of Devonshire, reached England last week. Our photograph shows her with her fiance, Capt. Harold Macmillan.—[Photograph by C.N.]

the origin of the doctrine of the Virgin Birth to the Mohammedans; or of whipping the dead horse, as when she pulverises the hell fire and Jonah's whale type of parson. She is often as dogmatic as the narrow Churchmen whom she condemns. Yet when all this is said, the fact remains that she has, with force and a charming sincerity, given voice to a feeling, a conviction, that is strong in many of us; and a voice is very welcome on the subject. She has, in short, made the not uncommon discovery that the Church is losing its hold on its children; that cathedrals should be a national heritage not only for the cultured and the orthodox and the archæologists, but also for the young and ignorant; and that "creeds outworn" should be publicly marched to the dust-heap. Felix, her gay young Dean, is little more than a peg for her enthusiasms, and in a way his existence tends to weaken her argument, for a Church that set him, with his views and his youth, in one of its high places must have had a kick or two still left in it. But, of course, only such a Dean could have introduced madrigal-singing and old English dances into the cathedral nave, so that it was necessary to invent Felix Morgaine. Here is a novel that is lively and picturesque, and that implores the inclusion of movement and joy and beauty in the religious life. David, you are asked to remember, danced before the Ark. . . . The old stuffy order of things is too strong for Morgaine, who is left "fighting on the Somme"; but it will not be Miss Knowles's fault if it has not received

"Abbotscourt." The atmosphere of "Abbotscourt" is Trollopian-and we do not apply the description as Mr. George Moore has recently applied it. It differs from the Victorian tradition in its handling of the old, vexed question of the English family embracing both Roman Catholic and Anglican members: John Ayscough, it will be understood, treats the situation with tolerance and with grace. "Abbotscourt" (Chatto and Windus) is original in placing the baronet and head of the family in the uncomfortable shoes of the poor relation, while the younger branch flourishes in the prosperity of a fat property, and later in an English Deanery. The scruples of Eleanor, the baronet's sister, who trudged the roads rather than seek the help of her kind clerical uncle, seem to us a little wanting in common-sense; but her spiritual sincerity comes through just the same. It would have been easy for the Dean, when he and she decided that a Catholic niece would be out of place in his Deanery, to give her a tiny independence instead of letting her go penniless from his door. He told the scampish brother

that he would allow Eleanor a hundred and fifty a year while she lived with him; but as he knew the young man's house to be unfit for her, it is difficult to understand why he did not insist on finding her a better home. But perhaps the genteel P.G. was an unknown figure in Rentminster. The book describes a world which is not, perhaps,



MARRIED LAST WEEK: THE HON, "SYLVIA" KITSON AND THE REV. HALSTEAD L. CONNER.

Lord and Lady Airedale's eldest daughter, the Hon. Marguerite Emily (Sylvia) Kitson was married last week to the Rev. Halstead L. Conner, Vicar-designate of St. Mark's, Woodhouse, Leeds, at St. Paul's, Knightsbridge. Our photograph shows the bride and bridegroom leaving the church after the ceremony.—[Photograph by C.N.]

exactly the world that most of us know best, but what it loses in actuality it gains in idealism. Charlotte, to be sure, is conventionally unpleasant; but we do not quite believe in Charlotte. Eleanor, and the Dean, and the gentle priest are the real people; the nasty ones are only a background to their saintliness.



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"G. K. C." ON AN EZRA POUNDISM.

THERE is a rather curious intellectual attitude not uncommon among Englishmen and Americans, though I think practically unknown among Frenchmen. The nearest description is to say it is German without being pro-German. I mean that there are many people who are quite above suspicion of having been Teutonist in the late war, who seem to be Teutonist in everything else except the war. It is doubtless generally an effect of their education, which was practically a branch of the boasted system of German education. Patriotism overcame it during the war; but plain commonsense cannot overcome it after the war. They had always been taught that a certain type of Teuton was a god: for four years they saw him with their own eyes behaving like a demon, but they seem now to have come to the conclusion that he must have been a nightmare. In the old Teutonist literature he was always too good to be true; but in practical political experience he affects them as being too bad to be true. So they tend more and more to dismiss the Great War as a horrible dream. It is always possible for the past

to melt into a sort of metaphysical unreality; it is always possible to use language as a vague and mutable medium in which all shapes become shapeless; it is always easier to see a small thing that happened to-day than a big thing that happened yesterday; and it would all be almost convincing, but for some wooden crosses in France and some empty chairs in England.

But there is another form of the same fashion that is much more plausible and subtle. It uses all the German theories without even knowing that they are German. It also uses them, I need hardly say, without knowing that they are nonsense. In the old silly business of the rivalry of races the trick is perhaps most transparent. The Latins were only called decadent in comparison with the superior Germans; but many are still calling the Latins decadent, even when they would call the Germans decadent The Celts were only called futile as a compliment to the Teutons; but many are still calling them futile who would no more compliment Teutons than compliment typhoid



THE FIRST PETROL-FEED PUMP: A WIMBLEDON GARAGE INAUGURATES THE AUTOMATIC SUPPLY SCHEME. The first automatic petrol-feed pump for London motor traffic has been installed at Wimbledon. Our photograph shows the appliance in It supplies spirit by the pint up to practically any gallons, as its tank contains 2000 gallons.—[Photograph by C.N.]



HAIR-CUTS ON ROCKING-HORSE-BACK: A NEW YORK NOVELTY.

One of the biggest stores in New York has inaugurated a special hair-dressing parlour for children. Instead of having to sit on a stiff barber's chair, young patrons of this shop mount royally caparisoned "rocking"-horses for hair-cutting operations. It is anticipated that parents will now find the trouble is getting their boys and girls away from the barber's, not taking them there! Photograph by T.P.A.

fever. There are, however, even more dangerous theories than the theory of race, which also bear the special stamp of the German race. There is the theory that we are all divided into Socialists and Individualists - an utterly meaningless distinction, since every man is social and every man is individual. There is the theory that everything can be foreseen by science and provided for by organisation; a theory of machinery which eliminates mind and especially the highest power of mind which is presence of mind. But the worst and most wearisome of all the German theories was a theory of history; which referred it to various animal and automatic functions instead of the free use of the mind. People were represented as doing things, not for what they said was their reason, not even perhaps for what they thought was their reason, but for some subconscious cause buried deeper than their brains, and only dug up by a professor thousands of years after they were dead. It was the search for food; even if the seekers were apparently unaware that they were starving. It was the search for climate; even when the seekers were obviously going into a worse climate. It was the wandering

instinct of their ancestors the Nomads; even when the walk was the very reverse of a wandering. It was the arboreal instinct of their ancestors the apes; even if they cut down the trees instead of climbing them. But whatever else it was, it was never the actual and apparent object with which the people themselves professed to be setting forth. It was Wanderlust, or the Folk-Wandering, or the migratory impulse, or the herd instinct, or the soul of the hive, or the subconscious mind, or the subliminal self, or the materialist theory of history. Differing, no doubt, in many of their dusty details, these things are all alike in two important points. They all invoke a vague popular science; and they all use it for the purpose for which most modern people are using science; the dethronement of reason.

For instance, Mr. Ezra Pound, the poet, is, I believe, an American, and therefore an Ally; and I do not doubt that he is a most loyal and convinced ally. He is certainly not in any sense a pro-German; yet I think he is in this paradoxical sense a German:





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Joint General Managers—E. W. WOOLLEY, R. RICHARDS, H. MARE, J. G. BUCHANAN. BALANCE SHEET, 31st December, 1919.

| LIABILITIES. | £ | 5. | d. | ASSETS. |
|------------------------------|-------------|----|----|-------------------------------------------------------|
| Capital Paid up, viz.:- | | | | Cash in hand (including Gold |
| 2,869,079 Shares of £12 each | | | | Coin £8,000,000) and Cash |
| 22 10s. Od. paid | 7,172,697 | 10 | 0 | at Bank of England |
| 497,855 Fully paid Shares | | | | Cheques on other Banks in |
| of £2 10 0 each | 1.244,637 | 10 | 0 | transstu |
| | 8,417,335 | 0 | Ū | Money at Call and at Short |
| Reserve Fund | 8,417,335 | 0 | 0 | Investments:- |
| Dividend payable on 2nd | | | | WarLoans, under cost (of which |
| February, 1920 | 530,292 | 9 | 1 | £428,067 10s. is lodged |
| Balance of Profit and Loss | 1 | | | for Public and other |
| Account, as below | 726,852 | 6 | 2 | Accounts) and other lirit- |
| | 18.091.814 | × | 3 | ish Government Securities |
| | 20,002,022 | 4 | м | Stocks Guaranteed by the |
| Current, Deposit and other | | | | British Government and |
| Accounts | 371,742,389 | 0 | 1 | Indian Railway Debentures |
| Acceptances on account of | | | | : Brit-sh Railway Debenture |
| Cuntomers | 29,014,568 | 4 | 5 | British Corporation Stocks, |
| | | | | Colonial and Foreign Gov- ernment Stocks and Bonds |
| | | | | Sandry Investments |
| | | | | Bills of Exchange |

s. a. 60:216.796 0 11 8,050,607 8 4 18,439,151 14 4 64,216,943 4 3 405,383 7 9 942,274 9 9 1,011,600 5 2 727,227 1 2 52,989,521 6 11 206,899,504 18 7 Advances on Current and other Acrounts 162,966,744 16 0 Advances on War Loans ... Liabilities of Customers for 15,589,303 5 2 29,014,568 4 5 Bank Premises, at Head Office and

Branches Belfast Bank Shares:-50,000 212 10 0 0ld Shares 22 10 0 paid 150,000 212 10 0 New Shares 22 10 0 paid Cont ... 21,237,500 0 0

Cost ... 21,237,500 U Less part Premium on Shares Issued 2477,810 0 0

759,690 0 0 2418,848,771 12

3,618,960 8 7

PROFIT & LOSS ACCOUNT for the year ending 31st December, 1919.

2418,848,771 12 9

To Interim Dividend at the rate of 18 per cent, per annum less Income Tax, paid 15th July, 1919

Dividend at the rate of 18 per cent, perannum less income Tax, payable on 2nd February, 1920

Salaries and Bonus to Staff with H.M. Forces and Bonus to Staff with H.M. Forces and Bonus to Staff with H.M. Forces and Bonus to Staff ...

Special "Peace" Bonus to Staff ...

Reserve for Deprenation of War Loans and Future Contingencies ...

Bank Premises Redemption Fund ...

Balance carried forward to next account ... By Balance from last Account ... ,, Net profits for the year ending 31st December, 1919, after providing for all Bad and 675,097 14 7 522,211 11 4 3,079,463 19 8 530,292 2 1 475,202 14 8 250,000 0 0 1,000,000 0 0 250,000 0 0 726,852 6 2 23,754,558 14 3 23,754,558 14 3

R. McKENNA, Chairman.

W. G. BRADSHAW, Deputy-Chairmen.

A. H. GOSCHEN, F. W. NASH, Director.

REPORT OF THE AUDITORS TO THE SHAREHOLDERS OF THE LONDON JOINT CITY

AND MIDLAND HANK LIMITED.

In accordance with the provisions of Sub-section 2 of Section 113 of the Companies (Consolidation) Act, 1908, we report as follows:—

report as follows:—
We have examined the above Balance Sheet in detail with the Books at Head Office and with the certified Returns from the Branches. We have satisfied ourselves as to the correctness of the Cash Balances, Cheques on other Banks in transitu, and the Billa of Exchange, and have verified the correctness of the Money at Call and Short Notice. We have also verified the Securities representing the Investments of the Bank, and having obtained all the information and explanations we have required, we are of opinion that such Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Company's affairs according to the hest of our information and the explanations given to us and as shown by the books of the Company. true and correct view of the state of the Company,
ations given to us and as shown by the books of the Company,
WHINNEY, SMITH & WHINNEY, Chartered Accountants,
Auditors.

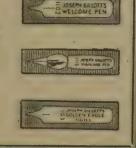
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EVERY WATCH GUARANTEED. Mustrated Catalogue of Wateries Works, or levelless complete with exercise lies out fire perpost.
65, Cheapside, and 105, Regent Street, London. cold rationalism of the riddle, because he wants to get

to the other side. It is Waddlelust; it is the Will to

a white hat is not, as in the low and popular vulgar

proverb, to keep his head warm. It is merely because

The reason that causes a baker to wear

vhat might be called an unconscious German; which cems a singularly innocent condition. For I see that in ne of his very interesting articles in the New Age he has tallen back on the old Teutonic trick of offering Wanderlust, or the nomadic instinct, as the explanation of the Crusades. He admits that a French historian, whom he is criticising, has studied with great exactitude all the facts about the Crusades; that is, all the things that the Crusaders and the friends and enemies of the Crusaders said and did in the Crusades. But he blames him for not guessing all sorts of things that unnot be guessed. "He does not notice that the populations of Europe were still latently nomadic: mly a few centuries after Attila, with the Mahomedan world still migratory. We have no documents conerning the frenetics and exhortations used to excite earlier tribat migrations. The Crusades are interesting

the baker is by the all-covering, whiteness moved. William the Conquerer, like the duck, did not cross the Channel because he wanted to get to the other side. He did it because he was an amphibious animal, like a walrus; because he was a sea-king as we-talk of a sealion or a sea-serpent. That all the rest of his conduct contradicts this theory does not seem to matter in the least. Hildebrand, like the

baker, did not wear the tiara (in those days it might have been a mitre) for the obvious reason that he thought he was the Pope; but because he vaguely felt, or taintly guessed, or dimly suspected that he

was something else; some sort of noble barbarian, and perhaps a heathen without knowing it. The theory of blind tribal tendencies is absurd enough in any of these cases; it is trebly absurd in the case of the Crusades. Anybody who knows anything of the philosophy of the Middle Ages knows perfectly well what was the object of the Crusades, and knows it to have been a perfectly reasonable object. The Crusaders, of all men,

were certainly not drifting anywhere and nowhere, but going to a very definite spot and no other. It is much more absurd than it would be to say that Mr. Pound's heroic countrymen of the American armies were a horde of tramps who started from Boston or

Philadelphia and happened to turn up in Flanders and Champagne. It is more absurd; for after all, the man who gallantly volunteered in Boston did not particularly desire to go to the town of Bailleul or the town of Albert. Every man who volunteered for the Crusades, from the Hebrides to the Isles of Greece,



LITTLE ONES, TOO! GERMAN PONIES FOR THE ALLIES.

Horses and ponies of all sizes are to be handed over to the Allies in Berlin in accordance with the terms of the Treaty. Our photograph shows some ponies which are included in the Allied spoils of war.—[Photograph by R. Sennecke.]

erms of the Treaty. Our photograph shows some ponies which are included in the Allied spoils of war.—[Photograph by R. Sennecke.]

sort of did definitely want to go to the town of Jerusalem.

And he had his reasons, very philosophical ones, though Mr. Pound and the professors of Teutonism may not understand them, for wishing to step at last on that strange and sacred soil, and, if only from afar, look at last upon that hill and city.—G. K. CHESTERTON.

Lieut.-Col. Robert Hamilton, Indian Army, Political Department of the Government of India, writes to us saying that Mr. H. St. J. B. Philby was not the first European to stay in the Palace of Ibn Saud, the ruler of Central Arabia, as stated in our issue of Nov. 8 last. He writes: "Whether or not the late Capt. Shake-speare lived in Ibn Saud's palace at Riyadh when he stayed there, I am not sure; but it is certain that I preceded Mr. Philby, for I had been in the Palace at Riyadh for weeks before Mr. Philby's arrival, and actually received him into my quarters there."



THE PEACE TREATY TERMS IN ACTION: HANDING OVER LIVESTOCK TO THE ALLIES IN BERLIN.

The handing over of Cerman livestock to the Allies was one of the terms of the Peace freaty. Our photograph shows an assembly of horses in Berlin being checked and inspected.

Photograph by Photogress.

because they are a last outburst of nomad instinct in Europe, and the only one we can study in any detail."

This is the jolly old Teutonic stunt. The reason that a duck waddles across the street is not, as in the



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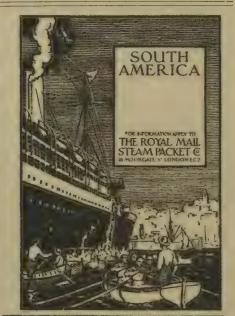
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For ecremas, rashes, pimples, irritations, itchings, chafings, and dandruff on scalp, as well as for cuts, wounds, bruises and bites and stings of insects, Cuticura Ointment is truly wonderful. It is so soothing and healing, especially when assisted by Cuticura Soap. First bathe the affected parts with Cuticura Soap and hot water. Dry gently and anoint with Cuticura Ointment. This treatment is best on rising and retiring. Soap 1s.. Ointment 1s. 3d and 2s. 6d. Sold throughout the Empire. For thirty-two page 18th Bb helt address. The when it is dead to have a constant of the return of the constant of the constant of the states. The when it is the constant of the states of the constant of the return of the retur

Appreciation

Every day brings further proof of the wonderful merits of Hall's Wine Every week adds its quota to the countless numbers of letters of appreciation received — wonderful letters — human letters — letters of experience and conviction. Every year adds to the sales of Hall's Wine—sales that in themselves are practical evidence of appreciation.

Still demand keeps growing and greater efforts are made each week to cope with it. Of all the letters of appreciation received, the most interesting and the most convincing are those received from doctors. These show a close observation of actual results achieved in a great variety of cases and under the most varied conditions.

We quote below from but a few of these letters from doctors.

NEVER FAILS

"After long experience of Hall's Wine I still continue to prescribe it, and have never failed to obtain decided benefit in all cases."

FOR "NERVES"

"I have found Hall's Wine particularly efficacious in general weakness and nerve weakness, and have recommended it to hundreds."

IN EXHAUSTION

"In cases of mental and physical exhaustion I know nothing better than Hall's Wine. I always take it myself when run down."

That doctors regularly prescribe Hall's Wine in their practice is shown in many of the letters received, both from doctors and their patients. One doctor (M.R.C.S., L.R.C.P.) writes: "I wish my daughter who is suffering from anæmia to take a course of Hall's Wine."

Hall's Wine

THE SUPREME TONIC RESTORATIVE

During the latter months of the war when the necessity for Hall's Wine grew more urgent, owing to the worry and anxiety of the times, numbers of doctors wrote appealing for special supplies for their patients. The proprietors of Hall's Wine are doing their utmost to meet the increasing volume of orders for Hall's Wine but as the demand still exceeds the available supplies, the public are asked to have patience.

LARGE SIZE BOTTLE, 5/6

Obtainable of all Wine Merchants, and Grocers and Chemists with Wine Licences.

STEPHEN SMITH & COMPANY, LIMITED, BOW, LONDON, E. 3.

SCIENCE JOTTINGS.

AFTER WAR, PESTILENCE.

OR some reason, not absolutely clear to science, man becomes poisonous to his fellows when too thick on the ground. Hence, any large assembly of people, if it continues for any great length of time, is extremely likely to be attacked by some epidemic. Given insufficient

feeding, haunting anxiety or fear, the absence of fresh air, and imperfect sanitation, and the likelihood becomes converted into certainty Yet the form of the epidemic varies with the climate or, more precisely, with the latitude. In the East or Southern part of Europe and Asia, it generally takes the form of cholera. In the colder North we get typhus, and of this disease Russia, Great Britain, and Ireland are the natural habitat. On our own shores, careful sanitation has done much to keep it at bay; and although it is occasionally heard of in Dublin, the outbreak at Sheffield in 1890 is believed to be the last time that it ever visited England. From Russia, where the inhabitants from the earliest times have lived huddled together, in winter at any rate, for the sake of warmth, it has never long been absent. At the present time, the destitution caused by the depredations of the Bolshevists, the absence of coal or

other fuel in the towns, and the relapse into barbarism of large sections of Russia's huge population, give it just the breeding-ground that it prefers.

The symptoms of typhus, once familiar to us under its popular name of jail-fever, are not very unlike those of measles. The period of incubation is said to be about twelve days, during which the patient suffers from slight headache, loss of appetite, attacks of giddiness, and bad dreams; but when the disease declares itself, its progress is extremely rapid. Pains like rheumatism all over one, stiffness of the limbs, and viclent headache are generally the first symptoms, with a temperature of anything

between 103 and 105 deg. Fahr. About the fifth day, the characteristic rash or eruption of spots, mostly on the abdomen and front part of the body, in small, raised patches much resembling those of measles, makes its appearance; and in the second week, the delirium which

is characteristic of the complaint generally follows. This is often of the acute or noisy kind, much like that produced by drink, or else resolves itself into continuous and rest-

PEACE CELEBRATIONS IN INDIA SEPOYS ENJOYING A FEAST AT THE CALCUTTA TOWN HALL. Photograph supplied by S. and G.

less muttering, alternating with a comatose condition at increasingly long intervals. If all goes well-and no disease depends more for its cure on careful nursing than does typhus—the crisis occurs in about a fortnight, when the patient, worn out apparently by a thirst so terrible as to shrivel his tongue into the likeness of a bird's, by maniacal restlessness and by such an alteration of all the functions as to make him almost unrecognisable, sinks into a deep sleep, from which he awakes with a cool and moist skin, the restoration of his normal functions, and the return of his mental faculties. The recovery is generally fairly rapid; and although complications may,

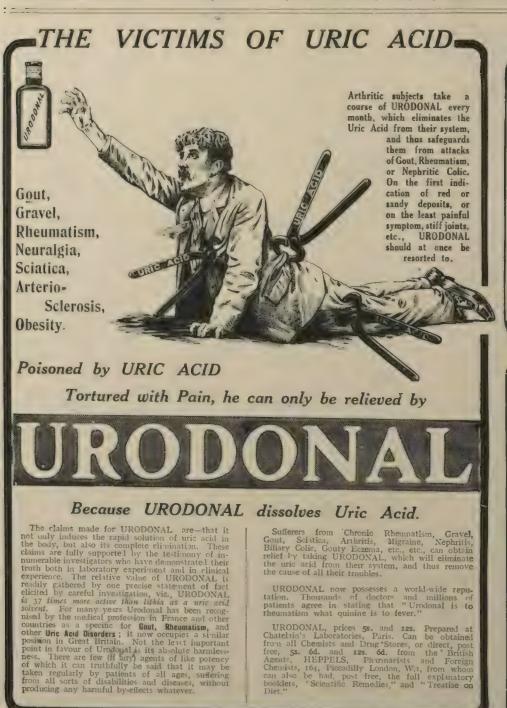
of course, occur in this as in any other prostrating disease, there is but very seldom any relapse, and it leaves no ill consequences behind it. One attack also gives immunity from its return, and it is as if the poison, when once eliminated from the system, had passed on to other victims.

The main point about this is the liability of all those in contact with the patient to contract the disease. The bacterial history is not yet quite clear, but there can be

no doubt that the breath, the touch, and the sputa of anyone attacked by it are alike infectious, especially during convalescence. Hence, in favourable conditions, it spreads like wildfire. Fortunately for mankind, the one thing the disease cannot withstand is fresh air, and the bacillus, or whatever is the micro-organism which is its proximate cause is not able to survive a long journey. Hence the immediate isolation of everyone suspect of the complaint is the best way of preventing its spread. It is at present raging, if half the talcs we hear are true, in Bolshevist Russia, and the first duty of every civilised Government further West would seem to be the imposition of quarantine upon all persons coming from that unhappy country.

The treatment of typhus hardly concerns the laity, the disease being at once too deadly and too infectious to admit of amateur experiment. There is

no specific cure for it, except fresh air, which can be the more freely employed as it is impossible for the patient in the acute stage of the disease to catch cold. All other remedies can be summarised as the treatment of symptoms, and include sponging with cold water to reduce the temperature, stimulants, tonics, and nutritious feeding to combat its prostrating effect, and even perfumes to counteract the horrible odour which is one of the worst characteristics of the disease. Oddly enough, the old-fashioned remedy of musk, given both externally and internally, has found favour in the eyes of many skilful practitioners.



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THE BLINDED SOLDIERS' FUTURE.

By SIR ARTHUR PEARSON.

HAVE been thinking it is remarkable how truly sympathetic the public has been with the case of the soldiers blinded in the War. It is never really easy to realise a condition beyond our experience. But the least imaginative people seem to have an instinctive idea of what loss of sight means. It may be due a little to partial experience—to the difficulties everyone has felt of finding his way in a dark room, of walking even over familiar country when everything is in blackness, and of the tediousness of wakeful hours in the night.

Blindness which comes to aged people whose work perhaps is done, whose interests and activities are already limited, is still one of the heaviest of all personal calamities. In the case of our soldiers none are old, the majority are in the prime of their early manhood or mere boys at the very beginning of life. Those who are born blind know nothing of the world as light transforms it, of things or people as they appear. But these young men had their vision and lost it, as the mountaineer looking down on the coloured landscape may find himself suddenly enveloped in fog, and shut out from the beauty about him. For them the way through life must ever be in this gloom, while the people about them remain in the

The heart of a blinded man must cry out for this lost joy, for his lost independence, for his lost power to do things. Thus it falls to us to find for him quickly a way to regain activity and self-reliance, to develop every faculty that will help the mind to picture the unseen. We cannot restore the joys of sight, but we can remove the tragedy of idle brooding

in the darkness over an empty life.

What has made the future bright for these blinded soldiers in spite of the darkness in which they live is a determination to regard the loss of sight as a handicap which they exert themselves constantly to lighten. The moment they accept the inevitable and begin to see what can be done in spite of it, they become cheerful. When these men first come to see me at St. Dunstan's we begin at once to look forward. We start, as it were, with the prospect of a flourishing little poultry-farm, or a snug shop where, to the astonishment of the neighbourhood, boots are being repaired by a blind cobbler. This blind cobbler, as we see him, will be able to do pretty well everything for himself-dress himself, of course; take his place at table like anyone else; find his way easily about his house and outside with proper caution. Instead of the ordinary newspapers or books to glance through, he will read with his fingers books and newspapers printed in Braille, a system by which also he will make notes and keep accounts for his own reference, and write to his blind friends. To other people he will write on a typewriter that he owns. In his shop he will handle practically the same tools as any sighted cobbler, and perhaps, having to take extra care, do even better work. For recreation the theatres can still be enjoyed, though in a new way, and concerts perhaps more than before; our cobbler can dance and join in a game of chess, draughts, dominoes, or cards (special ones marked with Braille dots); he can swim, and he can row.

The hopeless blind man becomes that efficient cobbler (if cobbler he chooses to be instead of selecting some other occupation of several in which blind men may excel) in the course of a year or a little more at St. Dunstan's. To equip him-self in the class-rooms and workshops is his part of the contract; to see that the typewriter and all that is needed for his shop duly materialise is for us to attend to. Over a thousand of these blinded soldiers have passed through St. Dunstan's, and have been set up in some occupation at which, apart from their pensions, they are now earning a living. Some hundreds of them have married since they lost their sight, and have children—children they have never seen, but whom they know by magic of love, no doubt, but also by the ways in which the blind learn to see without sight.

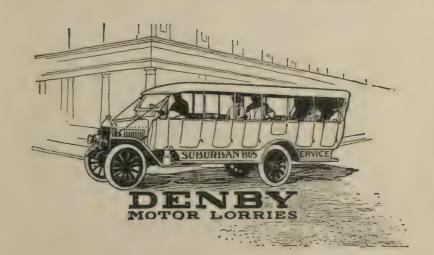
St. Dunstan's is still full, indeed, almost as busy as ever. On the heels of the men blinded on the battlefield there are coming to us those others whom blindness has overtaken gradually (23,000 men were discharged from the Army with seriously damaged sight). That is one reason why the work is not yet nearing an end. Another reason is that we are dealing with a great number of difficult cases. The men who were physically fit passed through their period of re-education in an astonishingly short time; others cannot. We are hampered, too, by the difficulty of getting suitable homes and shops and small poultry-farms for men who have completed their training, and who might otherwise make room for others.

I therefore still need all the support I can get for St. Dunstan's, and the more so because the cost of everything has so tremendously increased. It costs double what it once did to provide for our guests—and there is the same difficulty to face when it comes to setting them up in the home industries which they have learned in our workshops.

ARTHUR PEARSON,

Chairman Blinded Soldiers & Sailors Care Committee, All subscriptions or donations should be addressed to me or to the Treasurer, St. Dunstan's, Regent's Park, London, N.W. 1 [Registered under the War Charities Act, 1916.]





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THE CHRONICLE OF THE CAR.

A Registration Idea.

The London County Council is recommending that the present regulations relating to the registration and licens-

ing of cars should be amended so as to make it compulsory for vehicles to be re-registered every twelve months. The reason assigned is that the registers have become chaotic owing to the non-observance of the regulation which provides that, when a car changes hands, either the new or the old owner shall give notice to the registering authority. Often a car is sold through a dealer, minus number-plates, and its new owner simply registers it, without even troubling to find out by whom it was registered previously. Obviously, if this is done often, it may easily happen that a single car may figure as six in the registers. Apart from the difficulty of keeping the registers straight, it is pointed out that re-registration would act as a safeguard against the unlawful disposal of cars. In this connection I like the suggestion made by the Auto, which amplifies the L.C.C. idea by putting forward the proposal that not only should cars be re-registered yearly, but that the registering authority should provide a plate to be affixed to the car itself, and also a certificate of registration to be in possession of the owner. Then the vendor of a car would have to produce the documents of the case, which would have to tally with the permanent plate on the car;

difficulty of tracing a clear title to possession. If the Auto's idea were put into operation, it would be extremely difficult for the car-thief to sell his loot, and the epidemic of thefts would almost automatically die out.

it is far too easy to dispose of stolen cars, because of the

in Denmark.

New Motor Taxes in Denmark mobile Association and Motor Union is informed that a new tax has been

imposed on foreigners driving motor-cars in Denmark. It varies from £10 for one month's driving to £30 for three months'. The time of stay may be spread over several visits. This is a substantial addition to the fees already levied on the motoring visitor. There is another tax to be paid on motor-cars at the frontier or seaport varying from 3s. for one day's driving to 25s. for one month. Neither of these two taxes is applied in the case of motorcycles. There is still a third charge levied by the Customs officers as premium for compulsory insurance against Third Party and other claims on the motorist that may arise during his stay in the country. The amount of premium for one day is 3s., up to one month, 25s. This insurance applies to motor-cyclists also, who have to pay 18. 6d. for one day, up to 12s. 6d. for one month. These premiums need not be paid if the motorist can produce a policy showing that he is insured for Third Party Risks in Denmark, with an insurance company approved by the

> Danish authorities, for the amount required by law-12,000 kroner (£600) for a motor - car, or half that amount for a motor-cycle.

> The great A Boom in Motoring. has occurred in British motoring is dis-

closed by the records of new members joining the Automobile Association, During the first week of the New Year 1015 new members were enrolled: the full significance of this figure will be realised when it is remembered that during the winter motor vehicles are used less than at any other

season of the year. During the first week of 1914, when motor vehicles were easily obtainable at the seems to me to be a very valuable suggestion. At present pre-war cost, and were considerably less expensive to



AN ANCIENT FORM OF HOUSE AND A MODERN FORM OF LOCOMOTION: A WOLSELEY CAR PASSING AN INHABITED ROCK - DWELLING NEAR KIDDER-MINSTER, WORCESTERSHIRE.

run and maintain, new A.A. members numbered 288. That 1015 motorists have joined in the corresponding week in 1920, when cars and motor-cycles are realising abnormal prices, and are difficult to obtain, augurs well for the future growth of motoring in Great Britain, especially when the vexed problems of "production " are solved.

Among the portraits of well-known Masters of Fox - Hounds, given in our issue of Jan. 17, appeared one described as "Mr. James Tinsley," M.F.H. of the Cheshire pack. He informs us that this is a mistake, and that the photograph is really that of Mr. W. C. Tinsley, Master of the High Peak Harriers. We much regret the error, and have pleasure in giving publicity to this correction.



EXHIBITED AT THE RECENT SCOTTISH MOTOR SHOW: A HANDSOME DAIMLER 'LIGHT THIRTY.'

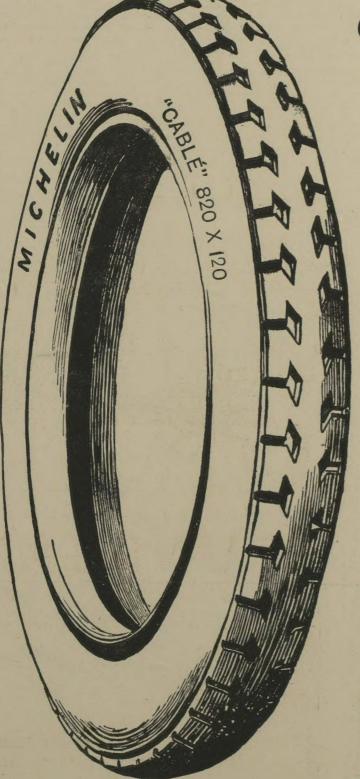
and it would be a foolish person who would purchase a vehicle without their production and verification. This





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"The World of Sound."-Continued from Page 202.]

vibrates; at one end it is still, at the other, the open end, it moves up and down into and out of the open air.

With this model we can easily carry our conceptions a stage farther. Here are two springs hanging from the ends of a string which passes over light pulleys at the top (Fig. 13). The two can be set swinging together, balancing their tensions at the top. Just so the air in a pipe open at both ends vibrates in such a way that in the centre of the pipe is a point of rest, or "node," where the pressures caused by the in-and-out swing of the two halves balance each other.

The five springs of Fig. 14 are vibrated by electric power. They are so connected to each other and to a battery that the same electric current runs through them all. By a principle well known to the electrician each spring tries to shorten itself when the current is running; but when this happens the shortest of the springs pulls its lower end out of the mercury into which it has been dipping and the current is broken; there is a spark at the point of breaking. Then the spring lengthens again, the current runs once more, and the cycle of events repeats itself. All the springs vibrate, the pace being set by the shortest. Notice that the longer springs divide themselves into separate vibrating sections in order to keep pace with their leader. Their lengths have to be adjusted carefully so that the division can be made exactly. When a long spring vibrates in sections, its motions are quicker than when it is vibrating as a whole; and the more sections, the greater the rapidity of vibration. Just so a long, pipe can be made to give several notes; in this way we get the various notes of a bugle, or the upper octaves of a whistle or a flute.

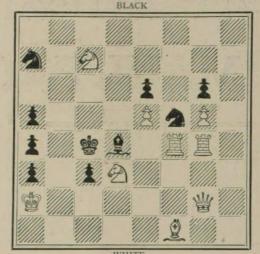
Note.—Professor Bragg has here condensed his second lecture on Sound at the Royal Institution. The first appeared in our issue of January 31. Abridgments of the others will follow in future numbers of this paper. The lectures will shortly be published in full, in book form, by Messrs. George Bell and Sons.

CHESS.

Solution of Problem No. 3827.—By W. R. Kinley. I. P to Q 3rd Any move

2. Mates accordingly.

PROBLEM No. 3829.—By J. R. NEUKOMM.



WHITE

White to play, and mate in two moves.

CORRECT SOLUTION OF PROBLEM No. 3821 received from P V Early (Fatshan, China); of No. 3822 from K D Ghose (New Delhi); of No. 3824 from H F Marker (Porbandar, India), and W E D Farmer (Toronto); of No. 3825 from E M Vicars (Norwich), and John F Wilkinson (Alexandria); of No. 3826 from M J F Crewell (Tulse Hill), J B Camara (Madeira), and R J Lonsdale (New Brighton); of No. 3827 from G W R (Rainhill), J T Palmer (Church), G Pratt (Streatham Park), M J F Crewell, C H Watson (Masham), R J Lonsdale, Léon Rylski (Belfast), W Strangman Hill (Palmerstown) and P Cooper (Clapham).

CORRECT SOLUTION OF PROBLEM No. 3828 received from A H H (Bath), Mark Dawson (Horsforth), J S Forbes (Brighton), G Lewthwaite (Leamington), Joseph Willcock (Southampton), H Grasett Baldwin (Farnham), Gerald Kidd (Chichester), H W Satow (Bangor), G Stillingfleet Johnson (Seaford), J C Stackhouse (Torquay), R C Durell (South Woodford), A W Hamilton-Gell (Exeter), R J Lonsdale (New Brighton), H Richardson (Leeds), and C H Watson (Masham).

Mr. Alain C. White has for his Christmas volume for 1919 a medley of prose and problems, which we frankly admit defies critical examination. With the exception of one interesting disquisition on Japanese board games, the prose all belongs to the humorous order of narration, and a good many problems to fantastic presentations of the game. We are very dubious how far humour and chess can be yoked beyond limits that are already pretty well trodden, and we intend no suggestion of disrespect to Mr. White when we say we prefer his problems to his fancies

CHESS IN LONDON.

Game played in the Championship Tournament of the City of London Chess Club, between Messrs. E. S. SERGEANT and T. GERMANN.

3. B to Kt 5th P to Q R 3rd 4. B to R 4th Kt to B 3rd 27. R takes R 5. Castles B to K 2nd 6. R to K sq P to Q Kt 4th B to Kt 3rd P to O ard superiority of White's game is now 8. P to Q R 4th B to Kt 5th rapidly demonstrated. 9. P to B 3rd Castles 10. P to R 3rd B to R 4th 11. P to Kt 4th B to Kt 3rd Kt to Q R 4th 12. P to Q 3rd

P to B 4th 13. B to B 2nd 14. Q Kt to Q 2nd Kt to B 3rd 15. Kt to B sq.

WHITE (Mr. S.) BLACK (Mr. G.)

2. Kt to K B 3rd Kt to Q B 3rd

I. P to K4th

P to K 4th

Q to B 2nd 16. Kt to K 3rd QR to Q sq 17. Kt to B 5th K to R sq KR to Ksq 18. Q to K 2nd 19. P takes P P takes P 20. B to Kt 3rd Kt to K Kt sq 21. B to Q 5th B to B sq 22. Kt (B 5) to R 4 Q Kt to K 2nd P to B 3rd 23. B to Kt 3rd 24. Kt to R 2nd Q to Q 2nd

26. Kt to B sq R takes R It is most unusual for an exchange was mated, but the interest of the

nearly as energetic as ever.

R to R sq

of pieces to be delayed so long in game fittingly ends here.

25. B to K 3rd

WHITE (Mr. S.) BLACK (Mr. G.) the Ruy Lopez; but it cannot be said that Black, for all his cautiousness, has a comfortable position.

R to B sq 28. P to K B 4th The beginning of the end, and the

P takes P 29. B takes KBP B to K sq 30. Kt to B 5th Kt to B 3rd

31. Kt (B sq) to K 3rd P to Kt 3rd 32. B takes Kt K takes B 33. Kt to Q 5th

After the school of Steinitz, but A powerful move, with more threats almost the only practicable move he than one in its range of action.

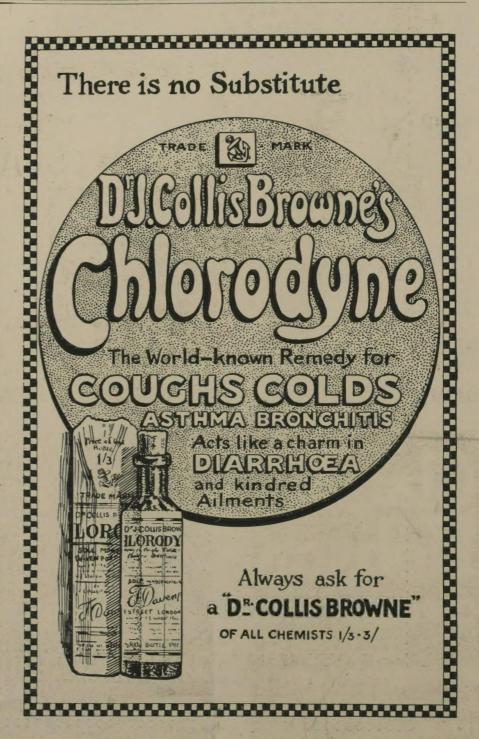
Q to Q sq 34. Kt (B 5) to K 3 K to Kt 2nd 35. Q to Kt 2nd B to B 2nd 36. P to Kt 5th B to K 2nd 37. Kt takes B Q takes Kt 38. R to K B sq, and wins

It was a pity that, after such exceptionally skilful handling of his Knights, White now overlooked the consummation of their triumph by Kt to B 5th (ch), which wins straight off. After this escape Black struggled for sixteen moves longer before he

The first number of the British Chess Magazine under fresh control has made its appearance, and if an exceptionally strong editorial staff can command success, there ought to be little doubt of a prosperous future for the new venture. The issue, having to come out in January, is necessarily of an improvised type, but, with adequate support forthcoming, considerable improvement is promised. As the magazine requires for its proper maintenance the names of at least 2000 annual subscribers, and will not continue after the end of this year if that measure of support is not secured, it behoves every chess player who can to send his subscription (12s.) to Messrs. Waland Co., Ltd., 13-15, Whitefriars Street, E.C.4. In this connection we desire to express our regret that in a moment of pure forgetfulness we did not, in our recent note, do justice to Mr. John Watkinson's part in the foundation of the British Chess Magazine. Anyone who knows of his distinguished services in the first sixteen years of its history must admit that but for him the magazine would nei her have come into existence nor attained a vigorous age. We are glad to learn the veteran editor is still alive and







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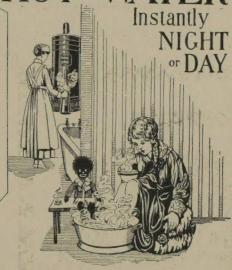
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THE PLAYHOUSES.

"MR. TODD'S EXPERIMENT." AT THE QUEEN'S. MR. TODD'S EXPERIMENT," the play with which Mr. Walter Hackett has provided Mr. Owen Nares, at the Queen's, makes good enough entertainment, but is crude art. It has affinities with cinema drama, from which it has borrowed hints-including the trick of repetition. Just for the length of a single act, its inset tableaux illustrative of the hero's youthful amours-which, as called up by a clairvoyant, are made visible to the audience, but invisible to the group on the stage-might be allowed to pass muster as an equivalent to the conventional expository prelude, though the true action of the piece only begins when they are over, and we see "Arthur John," bearded, shabbily garbed, and listless in disillusionment, stimulated by mementos of his past so far as to determine to shave. But when, in pursuance of Mr. Todd's scheme of reviving the indulged idler's sense of youth, "conjuror," Arthur John's rich and sceptical uncle, and the devoted little girl ward sit down together once more to the business of clairvoyance, and yet again a series of tableaux is presented in which the lover goes to see each of his three old loves—the clergyman's daughter become a flighty widow, the married woman who has grown reconciled to infidelity, and the actress for whom unhappiness in love has meant success in the theatrewe grow impatient with the playwright's machinery, and long for a straight story told in the direct way of which the

author is capable when he chooses. The scheme of the

play requires Mr. Nares to be constantly making love-

to no fewer than four women-and love-making is this

actor's forte; fortunately, there is a touch of humour in some of the scenes which he lets have its way. The four women are represented by Miss Doris Lloyd, Miss Marie Polini, Miss Meggie Albanesi, and Miss Marion Lorne. Miss Lorne, as the demure if love-sick little ward, agreeably recalls Miss Hilda Trevelyan's style.

"THE ADMIRABLE CRICHTON," AT THE ROYALTY. For sheer artistry, for combination of brainwork and whimsicality, for contrast of romantic warmth and satirical incisiveness, "The Admirable Crichton" must surely be regarded as Sir James Barrie's masterpiece. The play now revived at the Royalty has lost none of its many-sided appeal. Mr. Dennis Eadie makes Crichton an older and perhaps less buoyant a figure than either H. B. Irving or Mr. Lyn Harding conceived him; but the suave and decorous impassiveness of his butler is as satisfying as the sardonic masterfulness and impassioned eloquence of his island-king, and the two aspects of the man between them reveal the actor's art at its rarest and its best. We have had more stately heroines than that of Miss Julia James, who rarely suggests pride of birth or compasses haughtiness, though she is picturesque enough in island masquerade; and we have had Tweenies whom Miss Sylvia Oakley's performance—good as it is-will hardly efface from our recollections. But there has been no better Lord Loam than Mr. Alfred Bishop's; and even Mr. Gerald du Maurier hardly surpassed Mr. John Astley in the scene of Ernest's hysterical breakdown at the moment of rescue. Thus a fine play fairly gets its due.

Professor Henry Louis, Professor of Mining at Armstrong College, writes to point out a mistake in our

description of safety devices used in American coal-mines, illustrated in our issue of Jan. 24, where reference was made to the use of "inert coal dust" for checking explosions, according to information supplied with the photographs. Professor Louis writes: "There is no such thing as inert coal dust. The material used is inert dust, as its use is due to the fact that it is inert, that is, incombustible. This character would not be shared by any form of coal dust, which would tend to propagate and not to check an explosion. Furthermore, it is an error to indicate that the safety devices were introduced by the United States Bureau of Mines. The use of inert dust was due to experiments by Sir William Garforth at Altofts, Yorkshire, and M. Taffanal at Liévin, and the credit should be ascribed to these gentlemen."

During the past week Mürren has been the scene of a number of sporting contests which have been held in abeyance awaiting a favourable change in the weather conditions. This welcome change has come at last, and visitors are enjoying day after day of real summer sunshine in the midst of snow and ice. The skating competitions included that for the Lytton Challenge Cup and an ice-waltzing contest. In an International curling match, Scotland's representatives carried the day. The entire length of the Bob-run being now open and in splendid condition, bob and luge races have taken place. The Long-Distance Ski Race for the Roberts of Kandahar Cup attracted twenty-eight competitors to the start at the top of the Schiltgrat, whence they raced to a point a little above the village of Gimmelwald. With a continuation of the present glorious weather, visitors will have the opportunity of employing their pent-up energy.

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